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=> fil reg
FILE 'REGISTRY' ENTERED AT 15:48:46 ON 19 NOV 2008
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STRUCTURE FILE UPDATES:   18 NOV 2008  HIGHEST RN 1073232-10-6
DICTIONARY FILE UPDATES:  18 NOV 2008  HIGHEST RN 1073232-10-6

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TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> d que stat l91
L88             STR
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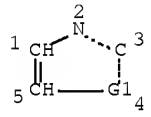


```
VAR G1=N/O/S
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS   5

STEREO ATTRIBUTES: NONE
L89             SCR 2043 OR 2127
L91       25372 SEA FILE=REGISTRY SSS FUL L88 NOT L89

100.0% PROCESSED  399421 ITERATIONS                      25372 ANSWERS
SEARCH TIME: 00.00.02


=> d his nofile

     (FILE 'HOME' ENTERED AT 09:20:34 ON 19 NOV 2008)

     FILE 'HCAPLUS' ENTERED AT 09:20:47 ON 19 NOV 2008
               E US20040185347/PN
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L1             1 SEA ABB=ON  PLU=ON  US20040185347/PN
                 SEL RN

     FILE 'REGISTRY' ENTERED AT 09:21:06 ON 19 NOV 2008
L2            54 SEA ABB=ON  PLU=ON  (463-79-6/BI OR 10377-51-2/BI OR
                 105-58-8/BI OR 108-32-7/BI OR 108-88-3/BI OR 117-80-6/BI
                 OR 1192-62-7/BI OR 1193-79-9/BI OR 126-33-0/BI OR
                 127-63-9/BI OR 131651-65-5/BI OR 13243-65-7/BI OR
                 1330-20-7/BI OR 14024-11-4/BI OR 14283-07-9/BI OR
                 162684-16-4/BI OR 16851-82-4/BI OR 18424-17-4/BI OR
                 1889-59-4/BI OR 21324-40-3/BI OR 271-89-6/BI OR 27359-10-
                 0/BI OR 28122-14-7/BI OR 28452-93-9/BI OR 29935-35-1/BI
                 OR 33454-82-9/BI OR 35363-40-7/BI OR 3680-02-2/BI OR
                 37220-89-6/BI OR 39300-70-4/BI OR 4265-27-4/BI OR
                 4437-85-8/BI OR 462-06-6/BI OR 524-42-5/BI OR 5535-43-3/B
                 I OR 5535-48-8/BI OR 56525-42-9/BI OR 616-38-6/BI OR
                 620-32-6/BI OR 623-53-0/BI OR 623-96-1/BI OR 625-86-5/BI
                 OR 67-71-0/BI OR 693-98-1/BI OR 71-43-2/BI OR 7439-93-2/B
                 I OR 7447-41-8/BI OR 7474-83-1/BI OR 77-77-0/BI OR
                 7791-03-9/BI OR 80-05-7/BI OR 90076-65-6/BI OR 95-15-8/BI
                  OR 96-49-1/BI)
                 D COST
                 D SAV
                 ACT WEI27201/A
                ---------
L3               STR
L4         45072 SEA SSS FUL L3
                ---------
L5             1 SEA ABB=ON  PLU=ON  L2 AND L4
                 D SCA

     FILE 'HCAPLUS' ENTERED AT 09:23:10 ON 19 NOV 2008
L6               QUE ABB=ON  PLU=ON  ELECTROLYTE
L7           299 SEA ABB=ON  PLU=ON  L4(L)L6
L8               QUE ABB=ON  PLU=ON  (LI OR LITHIUM)(2A)SALT
L9            13 SEA ABB=ON  PLU=ON  L7 AND L8
L10              QUE ABB=ON  PLU=ON  LI OR LITHIUM
L11              QUE ABB=ON  PLU=ON  WEIGHT OR WT# OR MASS##
L12           48 SEA ABB=ON  PLU=ON  L7 AND L11
L13              QUE ABB=ON  PLU=ON  0(W)(01 OR 02 OR 03 OR 04 OR 05 OR 1
                 OR 10 OR 2 OR 20 OR 5 OR 50)
L14           15 SEA ABB=ON  PLU=ON  L12 AND L13
                 D KWIC 1-2
L15              QUE ABB=ON  PLU=ON  1 OR 2 OR 3 OR 5 OR 10 OR 12 OR 15
                 RO 20
L16           15 SEA ABB=ON  PLU=ON  L14 AND L15
                 D KWIC 1-2
L17              QUE ABB=ON  PLU=ON  L15(5A)L11
L18           13 SEA ABB=ON  PLU=ON  L16 AND L17
L19      2559243 SEA ABB=ON  PLU=ON  L13(3A)L15
L20           12 SEA ABB=ON  PLU=ON  L18 AND L19
                 D KWIC 1-2
L21              QUE ABB=ON  PLU=ON  (ADDITIVE? OR ADJUVANT? OR AUXILIAR?
                 OR MODIF? OR AGENT? OR ELECTROLYTE)(S)L11
L22            7 SEA ABB=ON  PLU=ON  L20 AND L21
                 D KWIC 1-2
L23        16316 SEA ABB=ON  PLU=ON  L5
L24            5 SEA ABB=ON  PLU=ON  L23 AND L9
L25            1 SEA ABB=ON  PLU=ON  L22 AND L24
                 D SCA
```

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                D KWIC
L26             5 SEA ABB=ON  PLU=ON  L24 OR L25
L27             6 SEA ABB=ON  PLU=ON  L22 NOT L26

     FILE 'REGISTRY' ENTERED AT 10:18:59 ON 19 NOV 2008
L28             1 SEA ABB=ON  PLU=ON  4265-27-4/RN
                D SCA
L29             1 SEA ABB=ON  PLU=ON  L2 AND L28
                D SCA
                D RSD
L30        128811 SEA ABB=ON  PLU=ON  333.200.32/RID AND C>8 NOT PMS/CI
                  NOT (P OR SI OR M OR X)/ELS
L31         49612 SEA ABB=ON  PLU=ON  333.246.11/RID AND C>8 NOT PMS/CI
                  NOT (P OR SI OR M OR X)/ELS
L32             1 SEA ABB=ON  PLU=ON  120-72-9/RN
                D SCA
                D RSD
L33        577123 SEA ABB=ON  PLU=ON  333.151.57/RID AND C>8 NOT PMS/CI
                  NOT (P OR SI OR M OR X)/ELS

L34             3 SEA ABB=ON  PLU=ON  L30(L)L6
L35            56 SEA ABB=ON  PLU=ON  L28
L36             1 SEA ABB=ON  PLU=ON  L34 AND L35
L37             1 SEA ABB=ON  PLU=ON  L35 AND L6
L38             3 SEA ABB=ON  PLU=ON  L36 OR L34
L39         11604 SEA ABB=ON  PLU=ON  L31
L40            23 SEA ABB=ON  PLU=ON  L39 AND L6
L41             1 SEA ABB=ON  PLU=ON  L31(L)L6
                D SCA
                D HITSTR
L42             2 SEA ABB=ON  PLU=ON  L40 AND L10
L43             6 SEA ABB=ON  PLU=ON  L40 AND L13
L44             1 SEA ABB=ON  PLU=ON  L43 AND L17
                D KWIC
L45               QUE ABB=ON  PLU=ON  BATTERY
L46             0 SEA ABB=ON  PLU=ON  L40 AND L45
L47             7 SEA ABB=ON  PLU=ON  L40 AND L11
                D KWIC 1-2
                D KWIC 3-7
L48               QUE ABB=ON  PLU=ON  ELECTRO?/SC,SX
L49             3 SEA ABB=ON  PLU=ON  L40 AND L48
L50             8 SEA ABB=ON  PLU=ON  L38 OR L41 OR L42 OR L49
                D SCA
L51             7 SEA ABB=ON  PLU=ON  L50 NOT 28/SC,SX
                D HITSTR
                D HITSTR L49

     FILE 'REGISTRY' ENTERED AT 11:13:28 ON 19 NOV 2008
L52        577123 SEA ABB=ON  PLU=ON  L33 OR L33
                D RN 250000 L52
L53        287124 SEA RAN=(,622795-71-5) ABB=ON  PLU=ON  L33 OR L33
L54        289999 SEA ABB=ON  PLU=ON  L52 NOT L53

     FILE 'HCAPLUS' ENTERED AT 11:16:50 ON 19 NOV 2008
L55        268046 SEA ABB=ON  PLU=ON  L53
L56         21187 SEA ABB=ON  PLU=ON  L54
L57          1158 SEA ABB=ON  PLU=ON  (L55 OR L56) AND L6
L58           265 SEA ABB=ON  PLU=ON  L53(L)L6
L59             2 SEA ABB=ON  PLU=ON  L54(L)L6
                D HITSTR
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L60           2 SEA ABB=ON  PLU=ON  (L58 OR L59) AND L10
L61           1 SEA ABB=ON  PLU=ON  (L58 OR L59) AND L45
L62          21 SEA ABB=ON  PLU=ON  (L58 OR L59) AND L11
L63           4 SEA ABB=ON  PLU=ON  L62 AND L19
                D KWIC
L64           5 SEA ABB=ON  PLU=ON  L62 AND L17
                D SCA
L65           4 SEA ABB=ON  PLU=ON  (L59 OR L60 OR L61)
L66           5 SEA ABB=ON  PLU=ON  L64 NOT L65

L67       13987 SEA ABB=ON  PLU=ON  L30
L68          16 SEA ABB=ON  PLU=ON  L67 AND L6
L69           2 SEA ABB=ON  PLU=ON  L68 AND L10
L70           2 SEA ABB=ON  PLU=ON  L68 AND L45
L71           1 SEA ABB=ON  PLU=ON  L68 AND L11
                D SCA
                D KWIC
L72           5 SEA ABB=ON  PLU=ON  L68 AND L48
                D SCA
L73           4 SEA ABB=ON  PLU=ON  L72 NOT (27 OR 28)/SC,SX
L74           5 SEA ABB=ON  PLU=ON  (L69 OR L70 OR L71) OR L73
L75           2 SEA ABB=ON  PLU=ON  L74 NOT L38


     FILE 'LREGISTRY' ENTERED AT 15:06:28 ON 19 NOV 2008
L76             STR
L77          18 SEA SSS SAM L76
                E C3H4NO/MF
L78           0 SEA ABB=ON  PLU=ON  C3H4NO/MF

     FILE 'REGISTRY' ENTERED AT 15:09:02 ON 19 NOV 2008
L79          59 SEA ABB=ON  PLU=ON  C3H4NO/MF
                D SCA

     FILE 'STNGUIDE' ENTERED AT 15:10:11 ON 19 NOV 2008
L80           0 SEA ABB=ON  PLU=ON  L79 AND  OXAZOLE, 2,3-DIHYDRO-,

     FILE 'REGISTRY' ENTERED AT 15:12:48 ON 19 NOV 2008
L81           1 SEA ABB=ON  PLU=ON  L79 AND  OXAZOLE, 2,3-DIHYDRO-,
                D SCA
L82           1 SEA ABB=ON  PLU=ON  L79 AND 2-OXAZOLYL, 2,3-DIHYDRO-
                D SCA
L83           2 SEA ABB=ON  PLU=ON  (L81 OR L82)
L84           1 SEA ABB=ON  PLU=ON  693-98-1/RN
                D SCA
L85           1 SEA ABB=ON  PLU=ON  16851-82-4/RN
                D SCA
                D IDE

     FILE 'HCAPLUS' ENTERED AT 15:30:51 ON 19 NOV 2008
L86        3231 SEA ABB=ON  PLU=ON  L84
L87         135 SEA ABB=ON  PLU=ON  L85

     FILE 'LREGISTRY' ENTERED AT 15:33:54 ON 19 NOV 2008
L88             STR

     FILE 'REGISTRY' ENTERED AT 15:35:31 ON 19 NOV 2008
L89             SCR 2043 OR 2127
L90          50 SEA SSS SAM L88 NOT L89
L91       25372 SEA SSS FUL L88 NOT L89
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                SAV TEMP L91 WEI2726/A

     FILE 'HCAPLUS' ENTERED AT 15:40:00 ON 19 NOV 2008
L92        28130 SEA ABB=ON  PLU=ON  L91
L93          223 SEA ABB=ON  PLU=ON  L91(L)L6
L94          490 SEA ABB=ON  PLU=ON  L92 AND L6
L95           13 SEA ABB=ON  PLU=ON  L84 AND L93
L96           62 SEA ABB=ON  PLU=ON  (L93 OR L94 OR L95) AND L19
L97            7 SEA ABB=ON  PLU=ON  L96 AND L17
L98            3 SEA ABB=ON  PLU=ON  L97 AND ELECTRO?/SC,SX
L99           65 SEA ABB=ON  PLU=ON  L93 AND L10
L100          51 SEA ABB=ON  PLU=ON  L93 AND L45
L101          15 SEA ABB=ON  PLU=ON  L93 AND L8
L102          35 SEA ABB=ON  PLU=ON  L99 AND L100
L103          13 SEA ABB=ON  PLU=ON  L101 AND L102
L104           1 SEA ABB=ON  PLU=ON  L95 AND L103
L105          11 SEA ABB=ON  PLU=ON  L95 NOT (L98 OR L103)
L106         135 SEA ABB=ON  PLU=ON  L85
L107           3 SEA ABB=ON  PLU=ON  L106 AND L6


=> fil hcap
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FILE COVERS 1907 - 19 Nov 2008  VOL 149 ISS 21
FILE LAST UPDATED: 18 Nov 2008  (20081118/ED)

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the third quarter of 2008.

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d ibib abs hitstr hitind l98 1-3

L98  ANSWER 1 OF 3  HCAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2006:168213  HCAPLUS  Full-text
DOCUMENT NUMBER:          144:236259
TITLE:                    Proton-conducting film-like membranes and
                          polymer electrolyte fuel cells
INVENTOR(S):              Uno, Keiichi
PATENT ASSIGNEE(S):       Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 10 pp.
```

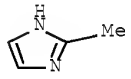
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006054156	A	20060223	JP 2004-260305	200408 11

PRIORITY APPLN. INFO.: JP 2004-260305 200408 11

AB Film-like membranes, obtained by supported polymerization of compns., consisting of (I) 1-60 weight% macromol. compds. and 40-99 weight% of (II) monomers containing polymerizable functional groups and proton donating groups, (III) low mol.-weight compds. having proton donating groups, and/or (IV) organic amines, where [(III) + (IV)]/(II) is 0.1-20, is claimed. Polymer electrolyte fuel cells including the membranes are also claimed. The membranes are free of degradation in their mech. strength on wetting, decrease in their proton conductivity at high- and low-temperature, and methanol crossover.

IT 693-98-1, 2-Methylimidazole
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(high strength proton-conducting polymer films for polymer electrolyte fuel cells)
RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST polymer electrolyte fuel cell proton conductor membrane; PEFC proton conductor membrane film strength
IT Polysulfones, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(UDEL; high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT Fluoropolymers, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT Polyimides, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(polyamide-; high strength proton-conducting polymer films for polymer electrolyte fuel cells)

IT Polysulfones, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(polyether-, Radel A; high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT Polysulfones, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(polyether-; high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT Polyamides, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(polyimide-; high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT Fuel cells
(polymer electrolyte; high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT Ionic conductors
(polymeric, proton; high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT Polyethers, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(polysulfone-, Radel A; high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT Polyethers, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(polysulfone-; high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT Polyesters, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(support film; high strength proton-conducting polymer films for polymer electrolyte fuel cells)
IT 693-98-1, 2-Methylimidazole 24937-79-9, KF 1700
27119-07-9 28210-41-5, p-Styrenesulfonic acid homopolymer
29727-06-8, Imidazolium trifluoromethanesulfonate 512813-38-6
869728-20-1 876656-01-8 876665-90-6, Vylomax MT 5050HR11NN
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(high strength proton-conducting polymer films for polymer electrolyte fuel cells)

L98 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:529311 HCAPLUS Full-text
DOCUMENT NUMBER: 131:150684
TITLE: Electrolyte and tin-silver electroplating process
INVENTOR(S): Toben, Michael P.; Marcktell, Daniel C.; Brown, Neil D.; Doyle, Colleen A.
PATENT ASSIGNEE(S): Learonal, Inc., USA
SOURCE: PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9941433	A1	19990819	WO 1999-US3056	19990211
W: JP RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6210556	B1	20010403	US 1999-246310	19990208
EP 1062383	A1	20001227	EP 1999-906970	19990211
R: DE, FR, GB, IT, NL				
JP 2004510046	T	20040402	JP 2000-531608	19990211
PRIORITY APPLN. INFO.:			US 1998-74481P	P 19980212
			US 1999-246310	A 19990208
			WO 1999-US3056	W 19990211

AB The invention relates to an electrolyte for depositing tin-rich tin-silver alloys upon a substrate. This electrolyte includes a basis solution containing a solution soluble tin and silver compds.; a tin chelating agent of a polyhydroxy compound in an amount sufficient to complex tin ions provided by the tin compound; and a silver chelating agent of a heterocyclic compound in an amount sufficient to complex silver ions provided by the silver compound Preferably, the tin and silver compds. are present in relative amts. to enable deposits containing about 85 to 99 % by weight tin and about 0.5 to 15 % by weight silver to be obtained.

IT 288-32-4, Imidazole, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(electroplating tin-silver alloy in solution containing)

RN 288-32-4 HCAPLUS

CN 1H-Imidazole (CA INDEX NAME)

IC ICM C25D003-60

CC 72-8 (Electrochemistry)
Section cross-reference(s): 56

ST electrolyte tin silver alloy electroplating

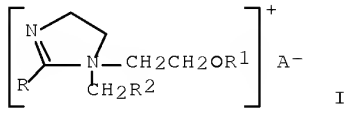
IT Electrodeposition

(electrolyte and tin-silver electroplating process)
IT Chelating agents
(for tin and silver, use in electrolyte for tin-silver electroplating)
IT Electrolytes
(for tin-silver electroplating process)
IT Temperature
pH
(of electrolyte for electroplating tin-silver alloy)
IT Complexation
(of tin and silver in electrolyte for tin-silver electroplating process)
IT Electrodeposits
(tin rich tin-silver alloys, electrolyte for electroplating)
IT 11144-61-9 235413-93-1, Silver 0.5-15, tin 85-100
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)
(electrolyte and tin-silver electroplating process)
IT 77-71-4, Dimethylhydantoin 87-99-0, Xylitol 123-56-8, Succinimide 288-32-4, Imidazole, properties 461-72-3, Hydantoin 868-18-8, Sodium tartrate, properties 2386-52-9, Silver methanesulfonate 7488-55-3, Stannous sulfate 7761-88-8, Silver nitrate, properties 7772-99-8, Stannous chloride, properties 11105-10-5, Triton QS 15 39423-51-3, Jeffamine t-403 60940-69-4 95860-13-2, Tin methanesulfonate
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(electroplating tin-silver alloy in solution containing)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L98 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:710438 HCAPLUS Full-text
DOCUMENT NUMBER: 121:310438
ORIGINAL REFERENCE NO.: 121:56649a,56652a
TITLE: Bright acid tin plating bath and brightener for bright acid tin plating baths
INVENTOR(S): Szelag, Petr; Zaruba, Jiri; Zarubova, Helena
PATENT ASSIGNEE(S): Czech.
SOURCE: Czech., 6 pp.
CODEN: CZXXA9
DOCUMENT TYPE: Patent
LANGUAGE: Czech
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 277257	B6	19921216	CS 1990-5064	19901018
PRIORITY APPLN. INFO.:			CS 1990-5064	19901018

OTHER SOURCE(S): MARPAT 121:310438
GI



I

AB The claimed bath contains 20-50 mL/L of the title brightener. The brightener contains (a) 15-60 weight % nonionic surfactants of the types of ethoxylated alkylphenols, polyethylene glycol with an average mol. weight 300-600, and polyethylene glycol-polypropylene glycol block copolymer with an average mol. weight 1500-2000 in the polypropylene glycol part and containing 30-50 weight % of the polyethylene glycol part, with 0.25 weight % as the min. amount of 1 type of this surfactant in the mixture; (b) 3-15 weight % of an amphoteric surfactant derived from imidazole, with the general formula I, where R=C8-18 alkyl; R1=H, CH2COOM, CH2CH2COOM; R2= COOM, CH2COOM, CHOHCH2SO3M; A=OH-, (1/2)SO42-; and M=H+, Na+, K+; (c) 0.1-5 weight % hydroquinone or pyrocatechol or their mixture; (d) 0.2-8 weight % benzalacetone or o-chlorobenzaldehyde or their mixture; (e) 0.01-1 weight % acrylic acid; (f) 1-4 weight % H2SO4; and (g) demineralized water or C1-3 alcs. or a mixture of water with these alcs. being the difference to 100 weight %. The synergic effect of the organic and inorg. components extends the useful life of the bath by 30-50 %. Cl- impurities ≤700 mg/L are tolerated.

IT 288-32-4D, Imidazole, derivs.
RL: USES (Uses)
(in brightener for acid tin plating baths)

RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

IC ICM C25D003-30
CC 72-8 (Electrochemistry)
Section cross-reference(s): 46

IT Electrolytes
(brightener for acid tin plating)

IT 79-10-7, Acrylic acid, uses 79-39-0, Methacrylic acid amide 89-98-5, o-Chlorobenzaldehyde 108-95-2D, Phenol, alkyl, ethoxylated 120-80-9, Pyrocatechol, uses 122-57-6, Benzalacetone 123-31-9, Hydroquinone, uses 288-32-4D, Imidazole, derivs. 7311-34-4, 3,5-Dimethoxybenzaldehyde 7664-93-9, Sulfuric acid, uses 9016-45-9, Ethoxylated nonylphenol 9036-19-5, Ethoxylated octylphenol 25322-68-3, Polyethylene glycol 106392-12-5, Ethylene glycol-propylene glycol block copolymer
RL: USES (Uses)
(in brightener for acid tin plating baths)

=> d ibib abs hitstr hitind l105 1-11

L105 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:319011 HCAPLUS Full-text
DOCUMENT NUMBER: 148:311482
TITLE: Fuel cell with enzyme-immobilized electrode and buffer-containing electrolyte and electronic apparatus
INVENTOR(S): Nakagawa, Takaaki; Sakai, Hideki; Sugiyama, Hiroyoshi
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 33pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

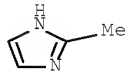
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008060067	A	20080313	JP 2007-155973	200706 13
PRIORITY APPLN. INFO.:			JP 2006-212889 A	200608 04

AB The fuel cell has an electrolyte held between a cathode and an anode with an enzyme immobilized on one or both of the electrodes, and contains a buffer substance containing an imidazole ring-containing compound The electronic apparatus is equipped with the above fuel cell. Alternatively, the fuel cell is equipped with the electrolyte containing 2-aminoethanol, triethanolamine, TES, and/or BES. The fuel cell provides high buffer efficiency at high power output operation.

IT 288-32-4, Imidazole, uses 693-98-1, 2-Methylimidazole
RL: MOA (Modifier or additive use); USES (Uses)
(imidazole compound in buffer-containing electrolyte for fuel cell with enzyme-immobilized electrode and electronic apparatus)

RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
IT 71-00-1, Histidine, uses 288-32-4, Imidazole, uses
616-47-7, 1-Methylimidazole 693-98-1, 2-Methylimidazole
822-36-6, 4-Methylimidazole
RL: MOA (Modifier or additive use); USES (Uses)
(imidazole compound in buffer-containing electrolyte for fuel cell with enzyme-immobilized electrode and electronic apparatus)

L105 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:1333492 HCAPLUS Full-text
DOCUMENT NUMBER: 147:541996
TITLE: Porous metal organic framework and electrolyte based on pyrroles and pyridinones
INVENTOR(S): Richter, Ingo; Schubert, Markus; Mueller, Ulrich
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 42pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007131955	A1	20071122	WO 2007-EP54568	200705 11

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

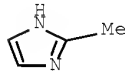
PRIORITY APPLN. INFO.: EP 2006-114001 A 200605 16

OTHER SOURCE(S): CASREACT 147:541996
AB The invention relates to a process for preparing a porous metal organic framework (e.g., Zn) containing at least one organic compound coordinated to at least one metal ion, which comprises the step of oxidation of at least one anode containing metal corresponding to the at least one metal ion in a reaction medium in the presence of the at least one organic compound, where the at least one organic compound is a monocyclic, bicyclic or polycyclic ring system which is derived at least from one of the heterocycles selected from the group consisting of pyrrole, alpha-pyridone and gamma-pyridone and has at least two ring nitrogens, where the ring system is unsubstituted or has one or more substituents selected independently from the group consisting of halogen, C1-6-alkyl, Ph, NH2, NH(C1-6-alkyl), N(C1-6-alkyl)2, OH, Ophenyl and OC1-6-alkyl, where the substituents C1-6-alkyl and Ph are unsubstituted or have one

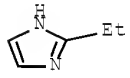
or more substituents selected independently from the group consisting of halogen, NH2, NH(C1-6-alkyl), N(C1-6-alkyl)2, OH, Ophenyl and OC1-6-alkyl.

IT 693-98-1 1072-62-4, 2-Ethylimidazole
RL: RCT (Reactant); RACT (Reactant or reagent)
(porous metalorg. framework and electrolyte based on pyrroles and pyridinones)

RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



RN 1072-62-4 HCAPLUS
CN 1H-Imidazole, 2-ethyl- (CA INDEX NAME)



CC 29-9 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 72

IT 51-17-2, Benzimidazole 61-82-5, 3-Amino-1,2,4-triazole 288-88-0, 1H-1,2,4-Triazole 512-42-5, Sodium methylsulfate 557-01-7, 2-Hydroxypyrimidine 693-98-1 1072-62-4, 2-Ethylimidazole 1455-77-2, 3,5-Diamino-1,2,4-triazole 4562-27-0, 4-Hydroxypyrimidine 13106-24-6, Methyltributylammoniummethyl sulfate
RL: RCT (Reactant); RACT (Reactant or reagent)
(porous metalorg. framework and electrolyte based on pyrroles and pyridinones)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

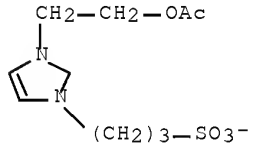
L105 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1293606 HCAPLUS Full-text
DOCUMENT NUMBER: 147:388905
TITLE: Multi-functional zwitterionic compounds as additives for lithium battery electrolytes
AUTHOR(S): Nguyen, Dinh Quan; Hwang, Jungmin; Lee, Je Seung; Kim, Honggon; Lee, Hyunjoo; Cheong, Minserk; Lee, Bora; Kim, Hoon Sik
CORPORATE SOURCE: Department of Chemistry, Kyung Hee University, Seoul, Dongdaemoon-gu, 130-701, S. Korea
SOURCE: Electrochemistry Communications (2006), Volume Date 2007, 9(1), 109-114
CODEN: ECCMF9; ISSN: 1388-2481
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Multi-functional zwitterionic compds. having both ester and sulfonate groups were synthesized and their electrochem. properties were studied. The effect

of added zwitterionic compds. on the cycling performance of the cell containing 1 M LiPF6 in EC, DMC, and EMC (1/1/1 by volume) was also examined The cell capacity was not varied much at 1/5 C up to 50 cycles with the addition of either 2.25% N-methylpyrrolidinium-N-(Pr sulfonate) (MePyS) or N-methylpiperidinium-N-(Pr sulfonate) (MePipS) as an additive, but dropped significantly at higher C rate of 1 C. Such a sharp decrease of the performance at higher C rate was not observed when MePyS or MePipS was replaced by N-(2-acetoxyethyl) pyrrolidinium-N-(Pr sulfonate) (EsPyS) or N-(2-acetoxyethyl) piperidinium-N-(Pr sulfonate) (EsPipS), implying the pos. role of the ester functional group. FTIR study clearly demonstrates that ester-containing zwitterionic compds. are able to interact with Li+ ions through both sulfonate and ester functional groups.

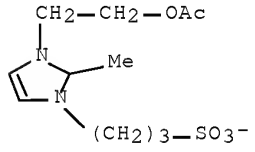
IT 950676-42-3P 950676-43-4P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(multi-functional zwitterionic compds. as additives for lithium battery electrolytes)

RN 950676-42-3 HCAPLUS
CN 1H-Imidazolium, 3-[2-(acetyloxy)ethyl]-1-(3-sulfopropyl)-, inner salt (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 950676-43-4 HCAPLUS
CN 1H-Imidazolium, 3-[2-(acetyloxy)ethyl]-2-methyl-1-(3-sulfopropyl)-, inner salt (CA INDEX NAME)

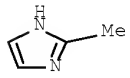


ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IT 288-32-4, Imidazole, reactions 693-98-1, 2-Methylimidazole
RL: RCT (Reactant); RACT (Reactant or reagent)
(multi-functional zwitterionic compds. as additives for lithium battery electrolytes)

RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



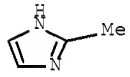
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 27, 28, 46
IT 160788-56-7P 876610-32-1P 950676-40-1P 950676-41-2P
950676-42-3P 950676-43-4P 950676-44-5P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(multi-functional zwitterionic compds. as additives for lithium battery electrolytes)
IT 68-12-2, Dimethyl formamide, reactions 75-36-5, Acetyl chloride
96-34-4, Methyl chloroacetate 288-32-4, Imidazole,
reactions 693-98-1, 2-Methylimidazole 1120-71-4,
1,3-Propanesultone 1310-73-2, Sodium hydroxide, reactions
2955-88-6, 1-(2-Hydroxyethyl)pyrrolidine 7646-69-7, Sodium hydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(multi-functional zwitterionic compds. as additives for lithium battery electrolytes)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L105 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1027137 HCAPLUS Full-text
DOCUMENT NUMBER: 146:29953
TITLE: About the choice of the protogenic group in polymer electrolyte membranes: Ab initio modelling of sulfonic acid, phosphonic acid, and imidazole functionalized alkanes
AUTHOR(S): Paddison, Stephen J.; Kreuer, Klaus-Dieter; Maier, Joachim
CORPORATE SOURCE: Department of Chemistry and Materials Science, University of Alabama in Huntsville, Huntsville, AL, 35899, USA
SOURCE: Physical Chemistry Chemical Physics (2006), 8(39), 4530-4542
CODEN: PPCPFQ; ISSN: 1463-9076
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The use of sulfonic acid, phosphonic acid, or imidazole as the protogenic group in polymer electrolyte membranes for fuel cells operating at intermediate temperature (T >100°) and very low humidity conditions was examined by comparing specific mol. properties obtained with 1st principles-based electronic structure calcns. Potential energy profiles determined at the B3LYP/6-311G** level for rotation of imidazole, phosphonic acid and sulfonic acid functional groups on saturated heptyl chains revealed that the torsional barriers are 3.9, 10.0, and 15.9 kJ/mol, resp.; indicating that the imidazole is the most labile when tethered to an alkyl chain. Min. energy conformations (B3LYP/6-311G**) of Me dimers of each of the acids indicated that the binding of the pairs of the acids is greatest in the phosphonic acids and lowest for

the imidazoles. Comparison of the ZPE corrected total energies of the Me acid dimers with corresponding pairs consisting of the conjugate acid and conjugate base revealed that the energy penalty in transferring the p (from acid to acid) was greatest for imidazole (120.1 kJ/mol) and least for the phosphonic acid (37.2 kJ/mol). This result agrees with measured p conductivities of acid-functionalized heptyl compds. under dry conditions and further supports the observation that phosphonic acid possesses the best amphoteric character, critical in achieving p conductivity when no solvent (i.e. H2O) is present. BSSE corrected binding energies were computed for the Me acids with a single H2O mol. and indicated that while the magnitude of the interaction of the sulfonic and phosphonic acids with H2O are similar (47.3 and 44.4 kJ/mol, resp.), the binding is much weaker to the imidazole (28.8 kJ/mol). The oxo-acids will probably retain H2O better under very low humidity conditions and the dynamics of H bonding of the 1st hydration H2O mols. will be more constrained with -SO3H and -PO3H2 than with imidazole.

IT 693-98-1, 2-Methyl imidazole 30346-87-3, Methyl imidazole 75202-33-4
RL: PRP (Properties)
(choice of protogenic group in polymer electrolyte membranes for fuel cells: ab initio modeling of sulfonic acid, phosphonic acid, and imidazole functionalized alkanes)

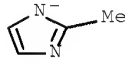
RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



RN 30346-87-3 HCAPLUS
CN 1H-Imidazole, methyl- (CA INDEX NAME)

D1—Me

RN 75202-33-4 HCAPLUS
CN 1H-Imidazole, 2-methyl-, ion(1-) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 22, 65

IT 75-75-2, Methyl sulfonic acid 693-98-1, 2-Methyl imidazole 993-13-5, Methyl phosphonic acid 16053-58-0 26428-16-0 30346-87-3, Methyl imidazole 39863-50-8 75202-33-4 114550-92-4 260799-11-9

RL: PRP (Properties)
(choice of protogenic group in polymer electrolyte membranes for fuel cells: ab initio modeling of sulfonic acid, phosphonic acid, and imidazole functionalized alkanes)
REFERENCE COUNT: 78 THERE ARE 78 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L105 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:822804 HCAPLUS Full-text
DOCUMENT NUMBER: 143:196912
TITLE: Proton-conducting electrolyte material for fuel cell
INVENTOR(S): Saito, Toshiya; Hase, Kohei
PATENT ASSIGNEE(S): Toyota Motor Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005222890	A	20050818	JP 2004-32103	20040209
CA 2527705	A1	20050818	CA 2005-2527705	20050118
WO 2005076398	A1	20050818	WO 2005-JP817	20050118
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CN 1788380	A	20060614	CN 2005-80000403	20050118
CN 100377406	C	20080326		
EP 1715541	A1	20061025	EP 2005-704028	20050118
R: DE, FR, GB, IT				
US 20060177716	A1	20060810	US 2005-560787	20051214

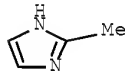
PRIORITY APPLN. INFO.: JP 2004-32103 A 20040209

WO 2005-JP817 W 200501 18

AB The claimed electrolyte material consists of (a) Bronsted acid and (b) base having an unshared electron pair, where the base has ≥1 of group satisfying nos. of constituent atoms other than H ≤3. The base may be selected from derivs. of imidazole, pyrazole, triazole, pyridine, pyrazine, pyrimidine, and pyridazine. The material provides high proton conductivity under humidification-free condition.

IT 693-98-1, 2-Methylimidazole
RL: TEM (Technical or engineered material use); USES (Uses)
(proton-conducting electrolyte material containing Bronsted acid and unshared electron pair-containing base for fuel cell)

RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



IC ICM H01M008-02
ICS H01M008-10
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 51-17-2, Benzimidazole 75-75-2, Methanesulfonic acid 103-74-2, 2-(2-Hydroxyethyl)pyridine 104-15-4, p-Toluenesulfonic acid, uses 288-13-1D, Pyrazole, derivs. 288-88-0D, 1H-1,2,4-Triazole, derivs. 289-80-5D, Pyridazine, derivs. 289-95-2D, Pyrimidine, derivs. 290-37-9D, Pyrazine, derivs. 616-47-7, 1-Methylimidazole 693-98-1, 2-Methylimidazole
RL: TEM (Technical or engineered material use); USES (Uses)
(proton-conducting electrolyte material containing Bronsted acid and unshared electron pair-containing base for fuel cell)

L105 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:546330 HCAPLUS Full-text
DOCUMENT NUMBER: 143:81095
TITLE: Imidazolium solid polymer electrolytes and fuel cells
INVENTOR(S): Fujibayashi, Nobuki
PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

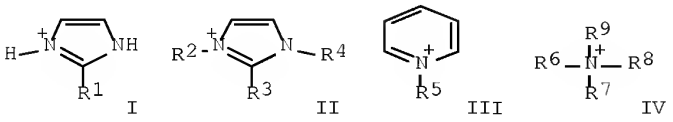
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005166598	A	20050623	JP 2003-407443	200312 05
KR 2005054814	A	20050610	KR 2004-73363	

200409
14

PRIORITY APPLN. INFO.: JP 2003-407443 A
200312
05

OTHER SOURCE(S): MARPAT 143:81095

GI



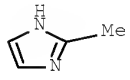
I II III IV

AB The title electrolytes providing high ionic conductivity in 100-300° in relative humidity below 50% comprise a polymer, amine derivative cations, and anions. The amine derivative cations include 2-imidazolium derives. (I: R1 = C1+ alkyl), pyridinium derivs., 1,2,3-imidazolium (II: R2-4 = H, C1+ alkyl, but not simultaneously H), pyridinium derivs. (III: R5 = C1+ alkyl), and/or quaternary ammonium derivs. (IV: R6-9 = C1+ alkyl). The anions may include AlCl4-, Al3Cl8-, Al2Cl7-, PF6-, BF4-, CF3SO3-, (CF3SO2)2N-, and/or (CF3SO2)3C-. The polymer may include polytetrafluoroethylene, polyether ether ketone, polybenzimidazole, polybenzoxazole, and/or polybenzothiazole. The electrolyte composition gives sufficient proton conductivity and makes the fuel cells operable in sufficient output power in 100-300° in relative humidity below 50%.

IT 288-32-4, Imidazole, uses 693-98-1, 2-Methylimidazole
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(solid polymer electrolyte composition, for fuel cells; imidazolium solid polymer electrolytes and fuel cells)

RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



IC ICM H01M008-02
ICS H01B001-06; H01M008-10

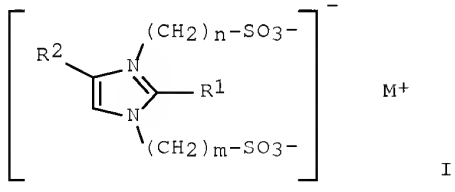
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 28
IT 288-32-4, Imidazole, uses 693-98-1, 2-Methylimidazole 9002-84-0D, Polytetrafluoroethylene, reformed with sulfonic acid derivs. 82113-65-3 145022-44-2, 1-Ethyl-3-methylimidazolium trifluoromethanesulfonate 551952-12-6
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(solid polymer electrolyte composition, for fuel cells; imidazolium solid polymer electrolytes and fuel cells)

L105 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:470646 HCAPLUS Full-text
DOCUMENT NUMBER: 141:26115
TITLE: Ionic compounds showing high carrier ion mobility, their electrolytes, and electrochemical devices containing the electrolytes
INVENTOR(S): Ono, Hiroyuki; Yoshizawa, Masahiro
PATENT ASSIGNEE(S): Yuasa Corporation, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004161615	A	20040610	JP 2002-288857	20021001
PRIORITY APPLN. INFO.:			JP 2002-278237 A	20020924

OTHER SOURCE(S): MARPAT 141:26115
GI



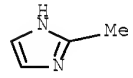
I

AB The compds. comprise organic ions comprising pos. partial structures and neg. partial structures, and showing total pos. or neg. charges, and carrier ions having charges opposite to those of the organic ions. Preferably, the compds. are alkali metal imidazolium disulfonates I (R1, R2 = H, Me; M+ = alkali metal ion; n, m = 3-18). The electrochem. devices, preferably Li batteries, suppress polarization.
IT 288-32-4, Imidazole, reactions 693-98-1, 2-Methylimidazole
RL: RCT (Reactant); RACT (Reactant or reagent)

(ionic compds. showing high carrier ion mobility as electrolytes for electrochem. devices suppressing polarization)

RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



IC ICM C07D233-60
ICS H01B001-06; H01G009-00; H01G009-025; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 28, 72, 76
IT 288-32-4, Imidazole, reactions 693-98-1, 2-Methylimidazole 822-36-6, 4-Methylimidazole 1120-71-4, 1,3-Propanesultone
RL: RCT (Reactant); RACT (Reactant or reagent)
(ionic compds. showing high carrier ion mobility as electrolytes for electrochem. devices suppressing polarization)

L105 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:40449 HCAPLUS Full-text
DOCUMENT NUMBER: 138:109584
TITLE: Electrolyte raw material kit, electrolyte composition, and sensitized photoelectrochemical cell
INVENTOR(S): Murai, Shinji; Mikoshiba, Satoru; Kakuno, Hiroyasu; Hayase, Shuji
PATENT ASSIGNEE(S): Toshiba Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003017147	A	20030117	JP 2001-199649	20010629
PRIORITY APPLN. INFO.:			JP 2001-199649	20010629

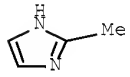
29

AB The kit is a 2 component kit, including a I containing electrolyte and a Si compound having OH or hydrolyzable groups attached to the Si atom. The electrolyte composition is a mixture of the I containing electrolyte and the Si compound The photoelectrochem. cell has the electrolyte between a pigment sensitized n-semiconductor electrode and a counter electrode.

IT 693-98-1, 2-Methylimidazole
RL: DEV (Device component use); USES (Uses)
(bicomponent electrolyte kits containing iodine and silicon compds. for photoelectrochem. cells)

RN 693-98-1 HCAPLUS

CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



IC ICM H01M014-00
ICS H01L031-04

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

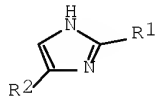
IT 77-58-7 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 107-12-0, Propionitrile 126-33-0, Sulfolane 693-98-1, 2-Methylimidazole 3089-06-3 7553-56-2, Iodine, uses 7681-11-0, Potassium iodide, uses 25068-38-6, Bisphenol A epoxy resin 77396-40-8, Sat 30 143314-16-3 486459-39-6 486459-40-9 486459-41-0 486459-42-1 486459-43-2 486459-44-3
RL: DEV (Device component use); USES (Uses)
(bicomponent electrolyte kits containing iodine and silicon compds. for photoelectrochem. cells)

L105 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:157705 HCAPLUS Full-text
DOCUMENT NUMBER: 110:157705
ORIGINAL REFERENCE NO.: 110:26061a,26064a
TITLE: Primary batteries having copper anodes
INVENTOR(S): Sawa, Natsuo
PATENT ASSIGNEE(S): Shikoku Chemicals Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63261680	A	19881028	JP 1987-95737	19870417
PRIORITY APPLN. INFO.:			JP 1987-95737	19870417

OTHER SOURCE(S): MARPAT 110:157705

GI



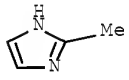
I

AB The title batteries have an electrolyte containing ≥1 of 1-unsubstituted imidazole I (R1 = H, alkyl; R2 = H, Me). Thus, a paste of Ni hyroxide, carbon powder, and Me cellulose; and a C bar were inserted in the center hole of a cylindrical Cu anode with a separator in between, and the assembly was impregnated with an aqueous 1N 2-methylimidazole electrolyte to form a primary battery having a .apprx.0.5-V voltage at 25°, which showed no electrolyte leakage.

IT 288-32-4, Imidazole, uses and miscellaneous 693-98-1, 2-Methylimidazole
RL: USES (Uses)
(electrolyte, for primary copper batteries)

RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



IC ICM H01M006-04
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 288-32-4, Imidazole, uses and miscellaneous 693-98-1, 2-Methylimidazole
RL: USES (Uses)
(electrolyte, for primary copper batteries)

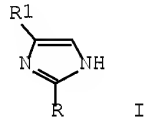
L105 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:143597 HCAPLUS Full-text
DOCUMENT NUMBER: 110:143597
ORIGINAL REFERENCE NO.: 110:23559a,23562a
TITLE: Heat-sensitive batteries
INVENTOR(S): Sawa, Natsuo
PATENT ASSIGNEE(S): Shikoku Chemicals Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63237362	A	19881003	JP 1987-73857	19870326

PRIORITY APPLN. INFO.: JP 1987-73857 19870326

OTHER SOURCE(S): MARPAT 110:143597
GI

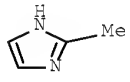


I

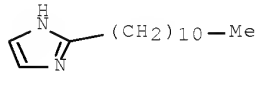
AB Batteries contain a meltable solid material containing imidazole deriv(s). I (R = H, alkyl, PhCH2, tolyl; R1 = H, Me, PhCH2) between their Zn anode and cathode, and the material is melted by external heating and form molten electrolyte to activate the batteries. These batteries are useful as sensors of overheating, fire, and etc. Thus, a battery having a Pt cathode indise a cylindrical Zn anode and a filter-paper separator containing impregnated solidified 2-undecylimidazole produced 0.15 V voltage when its temperature reached 75° by external heating.

IT 693-98-1, 2-Methylimidazole 16731-68-3, 2-Undecylimidazole
RL: PRP (Properties)
(electrolyte, for heat-sensitive batteries, in alarm devices)

RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



RN 16731-68-3 HCAPLUS
CN 1H-Imidazole, 2-undecyl- (CA INDEX NAME)



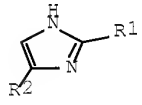
IC ICM H01M006-30
ICS H01M006-36
CC 72-10 (Electrochemistry)
Section cross-reference(s): 69
IT 693-98-1, 2-Methylimidazole 16731-68-3, 2-Undecylimidazole
RL: PRP (Properties)
(electrolyte, for heat-sensitive batteries, in alarm devices)

L105 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:118364 HCAPLUS Full-text
DOCUMENT NUMBER: 110:118364
ORIGINAL REFERENCE NO.: 110:19487a,19490a
TITLE: Primary manganese dioxide-zinc batteries
INVENTOR(S): Sawa, Natsuo
PATENT ASSIGNEE(S): Shikoku Chemicals Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63248071	A	19881014	JP 1987-82558	19870402

PRIORITY APPLN. INFO.: JP 1987-82558 19870402

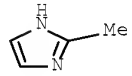
OTHER SOURCE(S): MARPAT 110:118364
GI



I

AB The title batteries have an electrolyte containing essentially ≥1 of imidazoles I (R1 = H, alkyl; R2 = H, Me) with the 1-position unsubstituted. Addition of the imidazole suppresses corrosion of the batteries, and prevents electrolyte leakage. A Zn-MnO2 battery using an aqueous 1 N 2-methylimidazole solution as electrolyte had a voltage of 1.25 V at 25°.
IT 288-32-4, Imidazole, uses and miscellaneous 693-98-1, 2-Methylimidazole
RL: USES (Uses)
(electrolyte, for primary zinc-manganese dioxide batteries)
RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

RN 693-98-1 HCAPLUS
CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



IC ICM H01M006-06
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 288-32-4, Imidazole, uses and miscellaneous 693-98-1
, 2-Methylimidazole
RL: USES (Uses)
(electrolyte, for primary zinc-manganese dioxide
batteries)

=> d ibib abs hitstr hitind l103 1-13

L103 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:1113375 HCAPLUS Full-text
DOCUMENT NUMBER: 149:429128
TITLE: Aqueous electrolyte with good high-temperature storage characteristics for lithium secondary batteries
INVENTOR(S): Kim, Bo Hyeon; Choi, Jong Hyeok; Yoo, Gwang Ho; Yoo, Ji Sang; Shin, Yeong Jun
PATENT ASSIGNEE(S): LG Chem, Ltd., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, 9pp.
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2008081749	A	20080910	KR 2007-22191	20070306
JP 2008218384	A	20080918	JP 2007-206620	20070808

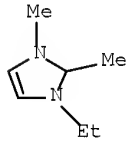
PRIORITY APPLN. INFO.: KR 2007-22191 A 20070306

AB This aqueous electrolyte contains a Li salt and organic solvent. The electrolyte also contains 1-ethyl-2,3-dimethylimidazolium cation with the anion a halogen, ClO4-, B10Cl10-, PF6-, CF3SO3-, CF3CO2-, AsF6-, SbF6-, AlCl4-, MeSO3-, CF3SO3-, C2F5SO2-, (CF3SO2)(C4F9SO2)-, CF3SO2-, and low-level aliphatic carboxylic acid group. The electrolyte has good high-temperature storage characteristics, so the electrolyte can be used in Li secondary batteries at high temperature and used for elec. automobiles.

IT 131097-15-9D, halogenide
RL: TEM (Technical or engineered material use); USES (Uses)
(aqueous electrolyte with good high-temperature storage characteristics for lithium secondary batteries)

RN 131097-15-9 HCAPLUS

CN 1H-Imidazolium, 3-ethyl-1,2-dimethyl- (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 28

ST aq electrolyte lithium secondary battery

IT Battery electrolytes
(aqueous electrolyte with good high-temperature storage characteristics for lithium secondary batteries)

IT Secondary batteries
(lithium; aqueous electrolyte with good high-temperature storage characteristics for lithium secondary batteries)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 623-53-0, Ethyl methyl carbonate 872-36-6, Vinylene carbonate 12016-91-0, Cobalt lithium manganese oxide (CoLi2Mn3O8) 12019-01-1, Copper lithium manganese oxide (CuLi2Mn3O8) 12031-75-3, Lithium manganese nickel oxide (Li2Mn3NiO8) 12031-76-4, Lithium manganese zinc oxide (Li2Mn3ZnO8) 12031-92-4, Lithium manganese oxide (Li4Mn5O12) 12057-17-9, Lithium manganese oxide (LiMn2O4) 12162-79-7, Lithium manganese oxide (LiMnO2) 21324-40-3, Lithium hexafluorophosphate (LiPF6) 106389-48-4, Iron lithium manganese oxide (FeLi2Mn3O8) 131097-15-9D, halogenide 152417-34-0, Lithium manganese oxide (LiMn2O3) 160749-19-9 174899-72-0 174899-97-9 292140-86-4 475975-26-9, Lithium manganese oxide (LiMnO3) 916730-11-5 1065032-26-9 1065032-30-5 1065032-36-1 1065032-41-8 1065032-42-9 1065032-43-0
RL: TEM (Technical or engineered material use); USES (Uses)
(aqueous electrolyte with good high-temperature storage characteristics for lithium secondary batteries)

L103 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:432085 HCAPLUS Full-text
DOCUMENT NUMBER: 146:444850
TITLE: Easy-handling lithium salts

bearing oligoether groups, their manufacture, and secondary lithium batteries using them as electrolytes
INVENTOR(S): Fujinami, Tatsuo; Matsui, Masaki
PATENT ASSIGNEE(S): Toyota Motor Corp., Japan; Shizuoka University
SOURCE: Jpn. Kokai Tokkyo Koho, 17pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2007099705	A	20070419	JP 2005-292929	20051005

PRIORITY APPLN. INFO.: JP 2005-292929 20051005

OTHER SOURCE(S): MARPAT 146:444850

AB The salts LiM(OY)n(Nc)4-n [M = Group IIIA element; Y = oligoether group; Nc = groups bearing heterocycles with N bonded to M and forming π-bond with other ring members, e.g., pyrrole, imidazole; n = 1-3] are manufactured by treatment of LiMH4 (M = same as above) with HOY (Y = same as above), and treatment of the resulting LiM(OY)nH4-n (n = same as above) with HNc (Nc = same as above). The salts, which are low-viscosity ionic liquid, show high ionic conductivity

IT 288-32-4, Imidazole, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture of aluminate-structure lithium salt ionic liqs. bearing oligoether groups as electrolytes for secondary lithium batteries)
RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 27, 38
ST lithium oligoether pyrrole aluminate ionic liq; viscosity low lithium oligoether imidazole aluminate; battery electrolyte lithium oligoether heterocycle aluminate
IT Secondary batteries
(lithium; manufacture of aluminate-structure lithium salt ionic liqs. bearing oligoether groups as electrolytes for secondary lithium batteries)
IT Battery electrolytes
Ionic conductors
Ionic liquids
Polymer electrolytes
(manufacture of aluminate-structure lithium salt

ionic liqs. bearing oligoether groups as electrolytes for secondary lithium batteries)

IT 934491-75-5P 934491-76-6P 934491-77-7P 934491-78-8P 934491-79-9P 934491-80-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of aluminate-structure lithium salt ionic liqs. bearing oligoether groups as electrolytes for secondary lithium batteries)

IT 109-97-7, Pyrrole 112-35-6, Triethylene glycol monomethyl ether 288-32-4, Imidazole, reactions 625-84-3, 2,5-Dimethylpyrrole 16853-85-3, Lithium aluminum hydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture of aluminate-structure lithium salt ionic liqs. bearing oligoether groups as electrolytes for secondary lithium batteries)

IT 9004-74-4, Polyethylene glycol monomethyl ether
RL: RCT (Reactant); RACT (Reactant or reagent)
(oligomeric; manufacture of aluminate-structure lithium salt ionic liqs. bearing oligoether groups as electrolytes for secondary lithium batteries)

L103 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:977382 HCAPLUS Full-text
DOCUMENT NUMBER: 145:360086
TITLE: Nonaqueous electrolytes for lithium ion batteries
INVENTOR(S): Chen, Zonghai; Amine, Khalil
PATENT ASSIGNEE(S): The University of Chicago, USA
SOURCE: U.S. Pat. Appl. Publ., 20pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060210883	A1	20060921	US 2006-373054	200603 10
WO 2006101779	A2	20060928	WO 2006-US8664	200603 10
WO 2006101779	A3	20070322		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: US 2005-662056P P 200503

15

OTHER SOURCE(S): MARPAT 145:360086

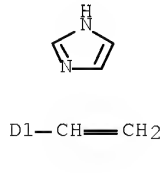
AB The present invention is generally related to electrolytes containing anion receptor additives to enhance the power capability of lithium-ion batteries. The anion receptor of the present invention is a Lewis acid that can help to dissolve LiF in the passivation films of lithium-ion batteries. Accordingly, one aspect the invention provides electrolytes comprising a lithium salt; a polar aprotic solvent; and an anion receptor additive; and wherein the electrolyte solution is substantially non-aqueous Further there are provided electrochem. devices employing the electrolyte and methods of making the electrolyte.

IT 288-32-4, Imidazole, uses 288-32-4D, Imidazole, aryloxy compound 29383-23-1, Vinylimidazole 897381-41-8
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolytes for lithium ion batteries)

RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

RN 29383-23-1 HCAPLUS
CN 1H-Imidazole, ethenyl- (CA INDEX NAME)



RN 897381-41-8 HCAPLUS
CN 1H-Imidazole, ethenylmethoxy- (9CI) (CA INDEX NAME)

D1—O—Me

D1—CH=CH2

INCL 429326000; 429329000; 429200000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium secondary battery nonaq electrolyte
IT Lewis acids
RL: MOA (Modifier or additive use); USES (Uses)
(anion receptor; nonaq. electrolytes for lithium ion batteries)
IT Solvents
(aprotic, polar; nonaq. electrolytes for lithium ion batteries)
IT Cyclophosphazenes
RL: MOA (Modifier or additive use); USES (Uses)
(aryloxy compound; nonaq. electrolytes for lithium ion batteries)
IT Secondary batteries
(lithium; nonaq. electrolytes for lithium ion batteries)
IT Battery electrolytes
(nonaq. electrolytes for lithium ion batteries
)
IT 60-29-7, Diethyl ether, uses 79-20-9, Methyl acetate 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-60-4, Propyl acetate 126-33-0, Sulfolane 141-78-6, Ethyl acetate, uses 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 7439-93-2D, Lithium, salt 39457-42-6, Lithium manganese oxide 346417-97-8, Cobalt lithium manganese nickel oxide (Co0.33LiMn0.33Ni0.33O2)
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolytes for lithium ion batteries
)
IT 78-19-3, 3,9-Divinyl-2,4,8,10-tetraoxaspiro[5,5]undecane 84-15-1, o-Terphenyl 84-15-1D, o-Terphenyl, aryloxy compound 86-74-8D, Carbazole, aryloxy compound 88-12-0, 1-Vinylpyrrolidin-2-one, uses 91-19-0, Quinoxaline 91-20-3, Naphthalene, uses 91-22-5, Quinoline, uses 91-22-5D, Quinoline, aryloxy compound 92-52-4, Biphenyl, uses 96-49-1D, Ethylene carbonate, diaryloxy compound 96-54-8, n-Methylpyrrole 101-84-8, Diphenyl ether 101-84-8D, Diphenyl ether, diaryloxy compound 102-09-0, Diphenyl carbonate 102-09-0D, Phenyl carbonate, aryloxy compound 102-09-0D, Phenyl carbonate, diaryloxy compound 102-71-6, Triethanolamine, uses 106-92-3, Allylglycidyl ether 106-99-0, Butadiene, uses 108-32-7D, Propylene carbonate, diaryloxy compound 109-93-3, Divinyl ether 109-97-7D, Pyrrole, aryloxy compound 109-99-9D, Thf, aryloxy compound 110-00-9D, Furan, diaryloxy compound 110-86-1, Pyridine, uses 110-89-4, Piperidine, uses 110-89-4D, Piperidine, aryloxy compound 111-34-2, Butyl vinyl ether 119-65-3, Isoquinoline 120-72-9, Indole, uses 120-92-3D, Cyclopentanone, aryloxy compound

140-67-0, 4-Allylanisole 142-96-1D, Butyl ether, aryloxy compound 176-53-4D, Ethylene silicate, aryloxy compound 176-53-4D, Ethylene silicate, diaryloxy compound 287-23-0D, Cyclobutane, aryloxy compound 288-32-4, Imidazole, uses 288-32-4D, Imidazole, aryloxy compound 289-80-5, Pyridazine 289-80-5D, Pyridazine, aryloxy compound 289-95-2, Pyrimidine 290-37-9, Pyrazine 290-37-9D, Pyrazine, aryloxy compound 291-37-2D, Cyclotriphosphazene, diaryloxy compound 503-30-0D, Oxetane, aryloxy compound 614-99-3D, Ethyl-2-furoate, aryloxy compound 856-46-2, Tris(4-fluorophenyl) borate 930-22-3 1072-53-3D, Ethylene sulfate, aryloxy compound 1072-53-3D, Ethylene sulfate, diaryloxy compound 1072-60-2, 2-Vinyltetrahydrofuran 1095-03-0, Triphenyl borate 1109-15-5, Tris(pentafluorophenyl)borane 1118-58-7 1337-81-1 1917-10-8, Vinyl-2-furoate 3741-38-6D, Ethylene sulfite, aryloxy compound 3741-38-6D, Ethylene sulfite, diaryloxy compound 3893-03-6, 4-Methoxy-o-terphenyl 4177-16-6, Vinyl pyrazine 4245-37-8, Vinyl methacrylate 4370-23-4, 1-Vinyl-piperidin-2-one 4427-96-7, Vinyl ethylene carbonate 5009-27-8D, Cyclopropanone, 2-aryl derivative 5009-27-8D, Cyclopropanone, 2-aryloxy derivative 5009-27-8D, Cyclopropanone, aryloxy compound 6622-92-0, 2,4-Dimethyl-6-hydroxy-pyrimidine 6919-80-8, Tris(1,1,1,3,3,3-hexafluoropropan-2-yl) borate 7570-02-7, Divinyl carbonate 7791-03-9 10411-26-4D, Butyl carbonate, diaryloxy compound 11099-06-2D, Ethyl silicate, diaryloxy compound 12789-45-6, MEthyl phosphate 12789-45-6D, Methyl phosphate, diaryloxy compound 13537-32-1D, Fluorophosphoric acid, alkyl derivative, lithium salt 14265-44-2D, Phosphate, aryloxy compound 14283-07-9, Lithium tetrafluoroborate 14861-06-4, Vinyl crotonate 15896-04-5 16410-02-9, 1-Vinylaziridin-2-one 18358-13-9D, Methacrylate, aryloxy compound 19024-82-9, Phosphoric acid, trivinyl ester 21324-40-3, Lithium hexafluorophosphate 21994-23-0 23462-75-1, Dihydropyran-3-one 23542-71-4 24213-83-0, Pyrazine, 2,5-divinyl 29383-23-1, Vinylimidazole 29935-35-1, Lithium hexafluoroarsenate 30676-86-9, Piperidine, vinyl 30851-79-7 31094-36-7, Quinoline, vinyl 32766-52-2, Tris(1,1,1,3,3,3-hexafluoro-2-(trifluoromethyl)propan-2-yl) borate 32893-16-6, Methyl vinyl carbonate 33454-82-9, Lithium triflate 33879-62-8, 2-Vinyloxetane 34721-16-9D, Furoate, 2-aryloxy compound 34721-16-9D, Furoate, 2-diaryloxy derivative 35143-18-1 36885-49-1, Vinyl phosphate 37203-76-2, Ethyl phosphate 38888-98-1, Diphenylethane 41824-21-9D, Crotonate, aryloxy compound 41824-21-9D, Crotonate, diaryloxy compound 44414-27-9 44866-76-4 50337-14-9, 3-Vinylcyclopentanone 51222-11-8 53627-36-4, β-Vinyl-γ-butyrolactone 55849-58-6 61548-40-1, Anisole, allyl 65967-52-4 66166-61-8, 3-Vinylcyclobutanone 66281-01-4 66281-16-1 66956-76-1 72607-84-2, 2,4-Divinyl-1,3-dioxane 75454-86-3 77208-21-0 90076-65-6 104531-81-9 117823-03-7 121712-01-4, 1-Vinylazetidin-2-one 125812-49-9 132404-42-3 132843-44-8 139669-84-4 146355-12-6, Tris(pentafluorophenyl)borate 210834-28-9, Tris(1,1,1,3,3,3-hexafluoro-2-phenylpropan-2-yl) borate 210834-35-8, Tris(2,4-difluorophenyl) borate 210834-37-0, Tris(2,3,5,6-tetrafluorophenyl) borate 210834-40-5, Tris(3-(trifluoromethyl)phenyl) borate 210834-42-7, Tris(3,5-bis(trifluoromethyl)phenyl) borate 244761-29-3, Lithium bisoxalatoborate 247229-51-2 365458-32-8, 2-(2,4-Difluorophenyl)-4-fluoro-1,3,2-benzodioxaborole 365458-33-9 365458-34-0 365458-35-1 365458-36-2 365458-37-3 365458-38-4 365458-39-5 365458-40-8 402564-35-6,

2-(3-Trifluoromethylphenyl)-4-fluoro-1,3,2-benzodioxaborole 409071-16-5 557084-91-0 678966-16-0 856785-12-1 866947-06-0 891828-02-7 891828-03-8 891828-04-9 891828-05-0 891828-06-1 891831-48-4 897028-09-0 897028-10-3 897028-11-4 897028-12-5, 2-Amino-4-vinylcyclobutanone 897028-13-6 897028-14-7 897028-15-8 897028-16-9 897028-17-0 897028-18-1 897028-19-2 897028-20-5 897028-22-7 897028-23-8 897028-24-9 897028-25-0 897028-26-1 897028-27-2 897028-28-3 897028-28-3D, diaryloxy compound 897381-31-6 897381-32-7 897381-34-9 897381-36-1 897381-37-2 897381-38-3 897381-41-8 897381-42-9 897381-44-1 897381-45-2 897381-46-3 897381-47-4 908587-13-3 908587-22-4 908599-70-2 908599-71-3 908599-72-4 908599-74-6 910038-86-7 910038-87-8 910038-88-9 910041-64-4D, aryloxy compound 910041-65-5D, diaryloxy compound
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolytes for lithium ion batteries)

IT 7789-24-4, Lithium fluoride, processes
RL: REM (Removal or disposal); PROC (Process)
(nonaq. electrolytes for lithium ion batteries)

L103 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:301494 HCAPLUS Full-text
DOCUMENT NUMBER: 144:334258
TITLE: Nonaqueous electrolyte battery
INVENTOR(S): Kishi, Takashi; Kuboki, Takashi; Saruwatari, Hidesato; Takami, Norio
PATENT ASSIGNEE(S): Kabushiki Kaisha Toshiba, Japan
SOURCE: U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060068282	A1	20060330	US 2005-179585	200507 13
JP 2006092974	A	20060406	JP 2004-278280	200409 24
CN 1753233	A	20060329	CN 2005-10107516	200509 23
KR 2006051575	A	20060519	KR 2005-88670	200509 23
KR 837450	B1	20080612		

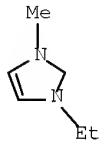
PRIORITY APPLN. INFO.: JP 2004-278280 A 200409 24

AB A nonaq. electrolyte battery that contains a molten salt electrolyte and has the enhanced output performances and cycle performances can be provided. The electrolyte has a molar ratio of lithium salt to molten salt of from 0.3 to

0.5, and the nonaq. electrolyte battery has a pos. electrode having a discharge capacity of 1.05 or more times that of a neg. electrode thereof.

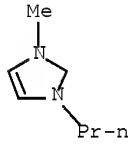
IT 65039-03-4, 1-Ethyl-3-methyl-imidazolium 80432-06-0 , 1-MEthyl-3-propyl-imidazolium 80432-08-2, 1-Butyl-3-methylimidazolium 94530-91-3 131097-15-9 , 1-Ethyl-2,3-dimethylimidazolium
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte battery)

RN 65039-03-4 HCAPLUS
CN 1H-Imidazolium, 3-ethyl-1-methyl- (CA INDEX NAME)



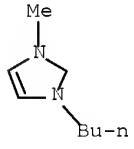
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 80432-06-0 HCAPLUS
CN 1H-Imidazolium, 1-methyl-3-propyl- (CA INDEX NAME)



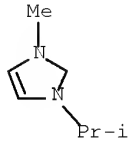
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 80432-08-2 HCAPLUS
CN 1H-Imidazolium, 3-butyl-1-methyl- (CA INDEX NAME)

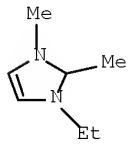


ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 94530-91-3 HCAPLUS
CN 1H-Imidazolium, 1-methyl-3-(1-methylethyl)- (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE
RN 131097-15-9 HCAPLUS
CN 1H-Imidazolium, 3-ethyl-1,2-dimethyl- (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE
INCL 429188000; 429231100; 429231500; 429221000; 429199000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST battery molten salt electrolyte
IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); USES (Uses)
(aromatic; nonaq. electrolyte battery)
IT Salts, uses
RL: DEV (Device component use); USES (Uses)
(molten; nonaq. electrolyte battery)
IT Battery electrolytes
Secondary batteries
(nonaq. electrolyte battery)
IT Carbonaceous materials (technological products)
Polyesters, uses
Polyolefins
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte battery)
IT 1332-29-2, Tin oxide 7439-93-2, Lithium, uses
7439-93-2D, Lithium, salt 11104-61-3, Cobalt
oxide 11126-12-8, Iron sulfide 12190-79-3, Cobalt
lithium oxide (CoLiO2) 12798-95-7 14283-07-9,
Lithium tetrafluoroborate 14874-70-5, Tetrafluoroborate
16919-18-9, Hexafluorophosphate 17523-59-0, Piperidinium
21324-40-3, Lithium hexafluorophosphate 25038-59-9, uses
33454-82-9, Lithium triflate 37181-39-8, Triflate
39300-70-4, Lithium nickel oxide 39302-37-9,
Lithium titanate 39457-42-6, Lithium manganese
oxide 44629-17-6 45187-15-3, Perfluorobutanesulfonate
52627-24-4, Cobalt lithium oxide 55526-39-1,
Pyrrolidinium 65039-03-4, 1-Ethyl-3-methyl-imidazolium
80432-06-0, 1-MEthyl-3-propyl-imidazolium 80432-08-2
, 1-Butyl-3-methylimidazolium 90076-65-6, Lithium
bis(trifluoromethanesulfonyl)imide 94530-91-3 98837-98-0
129318-46-3 131097-15-9, 1-Ethyl-2,3-dimethylimidazolium
132843-44-8, Lithium bis(pentafluoroethanesulfonyl)amide
143314-16-3, 1-Ethyl-3-methylimidazolium tetrafluoroborate
174899-73-1 174899-82-2, 1-Ethyl-3-methylimidazolium
bis(trifluoromethanesulfonyl)amide 195199-57-6, Lithium
dicyanamide 230627-60-8 365460-36-2 390358-97-1 390750-60-4
390750-62-6 429679-87-8 658693-67-5, Lithium titanium
oxide (Li1.3Ti1.7O4)
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte battery)

L103 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:1239360 HCAPLUS Full-text
DOCUMENT NUMBER: 144:8990
TITLE: Polymer electrolyte secondary lithium batteries with long cycle life and good stability at high temperature
INVENTOR(S): Wada, Yoshihiko; Miura, Katsuhito; Matsui, Shohei; Tabuchi, Masato
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005327566	A	20051124	JP 2004-143916	200405 13
PRIORITY APPLN. INFO.:			JP 2004-143916	200405 13

AB The batteries have crosslinked polymer electrolyte compns. consisting of (a) multi-component copolymer polyethers with Mw 104-107, (b) aprotic organic solvents, (c) low-mol.-weight S compds. and/or N compds. as additives, and (d) Li salts as electrolytes. In the batteries, side reactions between electrodes and electrolytes are prevented by the additives c.

IT 288-32-4D, Imidazole, derivs.
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)
RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

IC ICM H01M010-40
ICS C08G065-321; C08K003-00; C08K005-00; C08L071-00; H01M006-18
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST polymer electrolyte lithium battery thermally stable; polyoxyalkylene lithium complex battery electrolyte sulfur nitrogen; secondary battery polymer electrolyte sulfite oxazole
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(acrylic, lithium complexes, electrolytes; thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)
IT Polyoxyalkylenes, uses

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(lithium complexes, electrolytes; thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT Secondary batteries
(lithium; thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT Sulfonic acids, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(salts; thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT Lactones
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(sultones; thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT Battery electrolytes
Polymer electrolytes
(thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT Sulfates, uses
Sulfites
Sulfones
Sulfoxides
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT 815574-41-5DP, lithium complexes 815574-42-6DP, lithium complexes
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(crosslinked, electrolytes; thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate
RL: DEV (Device component use); USES (Uses)
(electrolyte solvents; thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT 14283-07-9, Lithium tetrafluoroborate 132843-44-8, Lithium bis(perfluoroethylsulfonyl)imide
RL: DEV (Device component use); USES (Uses)
(electrolytes containing polyoxyalkylenes; thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT 7439-93-2DP, Lithium, complexes with glycidyl (meth)acrylate-ethylene oxide copolymers 26282-59-7DP, lithium complexes
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(electrolytes; thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

IT 120-72-9D, Indole, derivs. 288-14-2D, Isoxazole, derivs.
288-32-4D, Imidazole, derivs. 288-42-6, Oxazole
289-80-5D, Pyridazine, derivs. 289-95-2D, Pyrimidine, derivs.
290-37-9D, Pyrazine, derivs. 352-93-2, Diethyl sulfide 597-35-3,
Diethyl sulfone 617-92-5, 1-Ethylpyrrole 1600-44-8,
Tetramethylene sulfoxide 1633-83-6, 1,4-Butanesultone 3741-38-6,
Glycol sulfite 7189-69-7, 1,1'-Sulfonyldiimidazole 12654-97-6D,
Triazine, derivs. 74124-79-1, N,N'-Disuccinimidyl carbonate
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(thermally stable secondary lithium batteries containing sulfur and/or nitrogen compds. in polymer electrolytes)

L103 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:871280 HCAPLUS Full-text
DOCUMENT NUMBER: 141:368313
TITLE: Nonaqueous electrolyte battery
INVENTOR(S): Takami, Norio; Saruwatari, Hidesato; Inagaki, Hirotaka
PATENT ASSIGNEE(S): Toshiba Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

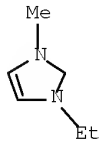
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004296108	A	20041021	JP 2003-83133	200303 25
JP 2007141860	A	20070607	JP 2007-11823	200701 22

PRIORITY APPLN. INFO.: JP 2003-83133 A3 200303 25

AB The battery has a cathode, an anode, and a nonaq. room temperature molten salt electrolyte containing Li+; where the cathode and/or anode contains metal oxide particles containing Al2O3, ZrO2, and/or SiO2 particles, having average primary particle diameter 1-100 nm. Another structure of the battery has a cathode, an anode, and a room temperature molten salt electrolyte containing Li+ and B[(OCO)2]2-. The molten salt preferably contains a tetravalent organic ammonium ion.

IT 65039-03-4
RL: DEV (Device component use); USES (Uses)
(room temperature molten electrolytes for batteries using alumina or zirconia or silica containing metal oxide electrode active mass)

RN 65039-03-4 HCAPLUS
CN 1H-Imidazolium, 3-ethyl-1-methyl- (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE
IC ICM H01M004-62
ICS H01M004-02; H01M004-06; H01M006-16; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST nonaq battery metal oxide electrode alumina zirconia silica; lithium salt molten salt electrolyte battery
IT Battery electrodes
Particle size
(particle size of alumina or zirconia or silica containing metal oxide electrode active mass for nonaq. batteries)
IT 1313-13-9, Manganese dioxide, uses 12031-95-7, Lithium titanium oxide (Li4Ti5O12) 12190-79-3, Cobalt lithium oxide (CoLiO2) 15365-14-7, Iron lithium phosphate (FeLiPO4)
RL: DEV (Device component use); USES (Uses)
(particle size of alumina or zirconia or silica containing metal oxide electrode active mass for nonaq. batteries)
IT 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(particle size of alumina or zirconia or silica containing metal oxide electrode active mass for nonaq. batteries)
IT 14874-70-5 17341-24-1, uses 37181-39-8, Trifluoromethanesulfonate ion 65039-03-4 98837-98-0 125579-65-9
RL: DEV (Device component use); USES (Uses)
(room temperature molten electrolytes for batteries using alumina or zirconia or silica containing metal oxide electrode active mass)

L103 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:753254 HCAPLUS Full-text
DOCUMENT NUMBER: 141:228183
TITLE: A nonaqueous electrolyte for lithium secondary battery
INVENTOR(S): Kim, Jin-Hee; Kim, Jin-Sung; Hwang, Sang-Moon; Paik, Meen-Seon; Kim, Hak-Soo
PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea; Cheil Industries Inc.
SOURCE: Eur. Pat. Appl., 33 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1458048	A1	20040915	EP 2003-90262	200308

21

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

KR 2004080775	A	20040920	KR 2003-15749	200303 13
JP 2005108439	A	20050421	JP 2003-183239	200306 26
CN 1531134	A	20040922	CN 2003-155332	200308 27
US 20040185347	A1	20040923	US 2003-658272	200309 10
PRIORITY APPLN. INFO.:			KR 2003-15749 A	200303 13

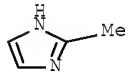
OTHER SOURCE(S): MARPAT 141:228183

AB An electrolyte for a lithium secondary battery includes lithium salts, a nonaq. organic solvent, and additive compds. The additive compds. added to the electrolyte of the present invention decompose earlier than the organic solvent to form a conductive polymer layer on the surface of a pos. electrode, and prevent decomposition of the organic solvent. Accordingly, the electrolyte inhibits gas generation caused by decomposition of the organic solvent at initial charging, and thus reduces an increase of internal pressure and swelling during high temperature storage, and also improves safety of the battery during overcharge.

IT 693-98-1, 2-Methylimidazole
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

RN 693-98-1 HCAPLUS

CN 1H-Imidazole, 2-methyl- (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST nonaq electrolyte lithium secondary battery; safety nonaq electrolyte lithium secondary battery

IT Secondary batteries
(lithium; nonaq. electrolyte for lithium secondary battery)

IT Battery electrolytes
Conducting polymers
Safety
Swelling, physical
(nonaq. electrolyte for lithium secondary battery)

IT Aromatic hydrocarbons, uses
Esters, uses
Ethers, uses

Ketones, uses
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

IT Lithium alloy, base
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

IT 67-71-0, Methylsulfone 71-43-2, Benzene, uses 77-77-0, Vinylsulfone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses 126-33-0, Tetramethylene sulfone 127-63-9, Phenylsulfone 462-06-6, Fluorobenzene 463-79-6D, Carbonic acid, chain ester 463-79-6D, Carbonic acid, cyclic ester 463-79-6D, Carbonic acid, ester 616-38-6, Dimethyl carbonate 620-32-6, Benzylsulfone 623-53-0, Methyl ethyl carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses 1889-59-4, Ethylvinylsulfone 3680-02-2, Methylvinylsulfone 4437-85-8, Butylene carbonate 5535-43-3, m-ChloroPhenyl vinyl sulfone 5535-48-8, Phenylvinylsulfone 7439-93-2, Lithium, uses 7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide 14024-11-4, Aluminum lithium chloride AlLiCl4 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 27359-10-0, Trifluorotoluene 28122-14-7, p-FluoroPhenyl vinyl sulfone 28452-93-9, Butadiene sulfone 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate, uses 37220-89-6, Aluminum lithium oxide 39300-70-4, Lithium nickel oxide 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 131651-65-5, Lithium nonafluorobutanesulfonate 162684-16-4, Lithium manganese nickel oxide
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

IT 80-05-7, Bisphenol A, uses 95-15-8, Thianaphthene 117-80-6, 2,3-Dichloro-1,4-naphthoquinone 271-89-6, 2,3-Benzofuran 524-42-5, 1,2-Naphthoquinone 625-86-5, 2,5-Dimethylfuran 693-98-1, 2-Methylimidazole 1192-62-7, 2-Acetylfuran 1193-79-9, 2-Acetyl-5-methylfuran 4265-27-4, 2-Butylbenzofuran 7474-83-1, 3-Bromo-1,2-naphthoquinone 13243-65-7, 2,3-Dibromo-1,4-naphthoquinone 16851-82-4, 1-(Phenylsulfonyl)pyrrole
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L103 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:39666 HCAPLUS Full-text
DOCUMENT NUMBER: 140:79836
TITLE: Electrolyte of lithium-sulfur batteries
INVENTOR(S): Kim, Seok; Jung, Yongju; Kim, Jan-Dee
PATENT ASSIGNEE(S): Samsung SDI Co., Ltd, S. Korea
SOURCE: U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

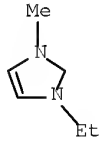
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040009393	A1	20040115	US 2003-617230	200307 11
KR 2004006429	A	20040124	KR 2002-40707	200207 12
JP 2005108438	A	20050421	JP 2003-183188	200306 26
CN 1487620	A	20040407	CN 2003-154619	200307 12

PRIORITY APPLN. INFO.: KR 2002-40707 A 200207 12

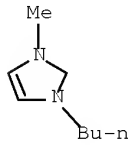
AB An electrolyte for use in a lithium-sulfur battery includes salts having imide anions. The electrolyte may further include salts having organic cations. When lithium-sulfur batteries include salts having imide anions as electrolytes, the sulfur utilization is increased, and cycle life characteristics and discharge characteristics such as discharge capacity and average discharge voltage are improved.

IT 65039-03-4D, 1-Ethyl-3-methylimidazolium, compound
80432-08-2, 1-Butyl-3-methylimidazolium 157310-70-8D
, 1H-Imidazolium, 1,2-dimethyl-3-propyl-, compound
RL: DEV (Device component use); USES (Uses)
(electrolyte of lithium-sulfur batteries)

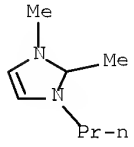
RN 65039-03-4 HCAPLUS
CN 1H-Imidazolium, 3-ethyl-1-methyl- (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE
RN 80432-08-2 HCAPLUS
CN 1H-Imidazolium, 3-butyl-1-methyl- (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE
RN 157310-70-8 HCAPLUS
CN 1H-Imidazolium, 1,2-dimethyl-3-propyl- (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE
IC ICM H01M010-40
ICS H01M004-58
INCL 429188000; 429330000; 429218100; 429340000; 429341000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST electrolyte lithium sulfur battery
IT Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(alkylated, binder; electrolyte of lithium-sulfur batteries)
IT Fluoropolymers, uses
Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(binder; electrolyte of lithium-sulfur batteries)
IT Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinked, binder; electrolyte of lithium-sulfur batteries)
IT Ethers, uses
RL: DEV (Device component use); USES (Uses)
(cyclic, bicyclic; electrolyte of lithium-sulfur batteries)
IT Battery electrolytes
(electrolyte of lithium-sulfur batteries)
IT Aromatic compounds
Esters, uses
Heterocyclic compounds
Imides
Ketones, uses
Lactones
Sulfates, uses
Sulfites
Sulfoxides
RL: DEV (Device component use); USES (Uses)
(electrolyte of lithium-sulfur batteries)
IT Group IIIA elements
RL: MOA (Modifier or additive use); USES (Uses)

(electrolyte of lithium-sulfur batteries)
IT Group IVA elements
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte of lithium-sulfur batteries)
IT Transition metals, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte of lithium-sulfur batteries)
IT Secondary batteries
(lithium; electrolyte of lithium-sulfur batteries)
IT Heterocyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(nitrogen, Li protecting compound; electrolyte of lithium-sulfur batteries)
IT Heterocyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(oxygen, Li protecting compound; electrolyte of lithium-sulfur batteries)
IT Ethers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(saturated, Li protecting compound; electrolyte of lithium-sulfur batteries)
IT Heterocyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(sulfur, Li protecting compound; electrolyte of lithium-sulfur batteries)
IT Ethers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(unsatd., Li protecting compound; electrolyte of lithium-sulfur batteries)
IT Lithium alloy, base
RL: DEV (Device component use); USES (Uses)
(electrolyte of lithium-sulfur batteries)
IT 9002-84-0, Ptfe 9002-86-2, Polyvinyl chloride 9002-89-5, Polyvinyl alcohol 9003-19-4, Polyvinyl ether 9003-20-7, Polyvinyl acetate 9003-32-1, Polyethyl acrylate 9003-39-8, Polyvinyl pyrrolidone 9003-47-8, Polyvinylpyridine 9003-53-6, Polystyrene 9011-14-7, Pmma 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 24937-79-9, Polyvinylidene fluoride 25014-41-9, Polyacrylonitrile 25322-68-3, Peo 25322-68-3D, Peo, alkylated 25322-68-3D, Peo, crosslinked
RL: MOA (Modifier or additive use); USES (Uses)
(binder; electrolyte of lithium-sulfur batteries)
IT 110-71-4 463-79-6D, Carbonic acid, acyclic compound 463-79-6D, Carbonic acid, bicyclic salt 646-06-0, Dioxolane 7439-93-2, Lithium, uses 14797-73-0, Perchlorate 14874-70-5, Tetrafluoroborate 16919-18-9, Hexafluorophosphate 16969-45-2D, Pyridinium, compound 16973-45-8, Hexafluoroarsenate 17009-90-4D, Imidazolium, compound 17009-91-5D, Pyrazolium, compound 17009-93-7D, Pyrazinium, compound 17009-95-9D, Pyrimidinium, compound 17009-97-1D, Pyridazinium, compound 28589-79-9D, Thiazolium, compound 37181-39-8, Trifluoromethylsulfonate 64001-57-6D, Oxazolium, compound 65039-03-4D, 1-Ethyl-3-methylimidazolium, compound 74432-42-1, Lithium polysulfide 80432-08-2, 1-Butyl-3-methylimidazolium 82113-65-3, Bis(trifluoromethylsulfonyl)imide 90076-65-6 129318-46-3, Bis(perfluoroethylsulfonyl)imide 132273-39-3 132843-44-8 157310-70-8D, 1H-Imidazolium, 1,2-dimethyl-3-propyl-, compound

174501-64-5, 1-Butyl-3-methylimidazolium hexafluorophosphate
216299-76-2
RL: DEV (Device component use); USES (Uses)
(electrolyte of lithium-sulfur batteries)

IT 7429-90-5, Aluminum, uses 7439-88-5, Iridium, uses 7439-89-6, Iron, uses 7439-92-1, Lead, uses 7439-96-5, Manganese, uses 7439-97-6, Mercury, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-04-2, Osmium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-15-5, Rhenium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-20-2, Scandium, uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-25-7, Tantalum, uses 7440-26-8, Technetium, uses 7440-28-0, Thallium, uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-43-9, Cadmium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-55-3, Gallium, uses 7440-56-4, Germanium, uses 7440-57-5, Gold, uses 7440-62-2, Vanadium, uses 7440-65-5, Yttrium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses 7440-74-6, Indium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte of lithium-sulfur batteries)

L103 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:417542 HCAPLUS Full-text
DOCUMENT NUMBER: 139:9292
TITLE: Lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy
INVENTOR(S): Martinet, Sebastien; Le Cras, Frederic
PATENT ASSIGNEE(S): Commissariat a l'Energie Atomique, Fr.
SOURCE: Fr. Demande, 30 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2832859	A1	20030530	FR 2001-15377	20011128
FR 2832859	B1	20040109		
WO 2003047021	A2	20030605	WO 2002-FR4066	20021127
WO 2003047021	A3	20040930		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,

TG				
AU 2002365474	A1	20030610	AU 2002-365474	200211 27
EP 1493202	A2	20050105	EP 2002-803836	200211 27
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1596483	A	20050316	CN 2002-823538	200211 27
JP 2005539347	T	20051222	JP 2003-548334	200211 27
US 20050069768	A1	20050331	US 2004-495733	200405 14
US 7326493	B2	20080205		
PRIORITY APPLN. INFO.:			FR 2001-15377 A	200111 28
			WO 2002-FR4066 W	200211 27

AB A lithium electrochem. generator (i.e., battery) contains two peripheral electrodes (one pos. and one neg.) that contact active material beds, each of which, in turn, contacts a separator. Between the two separators is at least one bipolar electrode sandwiched between active neg. and active pos. bed materials. The elec. conducting substrates are aluminum or an aluminum alloy. A suitable neg. active material is Li4Ti5O12; suitable pos. active materials are transition metal phosphates, orthosilicates, and oxides, as well as carbon or non-metal salts (especially phosphates such as Li(Fe,Mn)PO4 or LiCoPO4 and oxides such as LiAlxNi1-xO2 (x = 0-0.25)). The separators can also contain an ionic liquid (i.e., imidazolium, dialkylimidazolium, alkylpyridinium, and dialkylpyridinium chloroaluminate and alkylchloroaluminate salts) that includes a dissolved lithium salt.

IT 288-32-4D, 1H-Imidazole, alkyl derivs., salts
RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
(battery electrolytes containing; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

IC ICM H01M010-38
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium battery bipolar electrode; aluminum alloy lithium battery bipolar electrode
IT Pyridinium compounds

RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
(battery electrolytes containing; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT Battery electrodes
(bipolar; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT Ionic liquids
(electrolytes; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT Onium compounds
RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
(imidazolium compds., battery electrolytes containing; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT Battery electrolytes
(ionic liqs.; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT Secondary battery separators
(lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT Aluminum alloy, base
RL: DEV (Device component use); USES (Uses)
(elec. conducting substrates; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT 110-86-1D, Pyridine, alkyl derivs., salts 288-32-4D, 1H-Imidazole, alkyl derivs., salts
RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
(battery electrolytes containing; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT 13824-63-0, Cobalt lithium phosphate (CoLiPO4) 19414-36-9, Iron lithium manganese phosphate ((Fe,Mn) Li(PO4)) 532934-10-4, Aluminum lithium nickel oxide (Al0-0.25LiNi0.75-1O2)
RL: DEV (Device component use); USES (Uses)
(bipolar electrode; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT 7429-90-5, Aluminum, uses
RL: DEV (Device component use); USES (Uses)
(elec. conducting substrates; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT 532934-12-6, Lithium nitride oxide phosphide (Li3N0.3O2.5P)
RL: DEV (Device component use); USES (Uses)
(lithium cation conductor; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

IT 12031-95-7, Lithium titanium oxide (Li4Ti5O12)

RL: DEV (Device component use); USES (Uses)
(neg. active material; lithium battery comprising at least a bipolar electrode with conducting substrates of aluminum or aluminum alloy)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

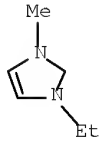
L103 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:276685 HCAPLUS Full-text
DOCUMENT NUMBER: 138:274125
TITLE: Batteries using molten salt electrolyte
INVENTOR(S): Guidotti, Ronald A.
PATENT ASSIGNEE(S): Sandia Corporation, USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6544691	B1	20030408	US 2000-689238	200010 11

PRIORITY APPLN. INFO.: US 2000-689238 200010 11

AB An electrolyte system suitable for a molten salt electrolyte battery is disclosed where the electrolyte system is a molten nitrate compound, an organic compound containing dissolved lithium salts, or a 1-ethyl-3-methlyimidazolium salt with a melting temperature between approx. room temperature and approx. 250°. With a compatible anode and cathode, the electrolyte system is utilized in a battery as a power source suitable for oil/gas borehole applications and in heat sensors.

IT 65039-03-4D, 1-Ethyl-3-methylimidazolium, salt
RL: DEV (Device component use); USES (Uses)
(batteries using molten salt electrolyte)
RN 65039-03-4 HCAPLUS
CN 1H-Imidazolium, 3-ethyl-1-methyl- (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE
IC ICM H01M006-04
INCL 429344000; 429307000; 429321000; 429338000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56
ST battery molten salt electrolyte

IT Battery electrolytes
Temperature sensors
(batteries using molten salt electrolyte)
IT Imides
RL: DEV (Device component use); USES (Uses)
(lithium; batteries using molten salt electrolyte)
IT Nitrates, uses
RL: DEV (Device component use); USES (Uses)
(molten; batteries using molten salt electrolyte)
IT Wells
(oil/gas; batteries using molten salt electrolyte)
IT Primary batteries
(thermal; batteries using molten salt electrolyte)
IT Calcium alloy, base
Magnesium alloy, base
Zinc alloy, base
RL: DEV (Device component use); USES (Uses)
(batteries using molten salt electrolyte)
IT 67-71-0, Dimethyl sulfone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 599-66-6, Di-p-tolylsulfone 1313-13-9, Manganese dioxide, uses 1314-62-1, Vanadia, uses 7439-93-2, Lithium, uses 7757-79-1, Potassium nitrate, uses 7784-01-2, Silver chromate 7789-18-6, Cesium nitrate 7790-69-4, Lithium nitrate 7791-03-9, Lithium perchlorate 12018-01-8, Chromium dioxide 12031-65-1, Lithium nickel oxide linio2 12190-79-3, Cobalt lithium oxide colio2 12615-39-3 12798-95-7 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 39457-42-6, Lithium manganese oxide 51177-06-1, Chromium lithium oxide 65039-03-4D, 1-Ethyl-3-methylimidazolium, salt 65777-94-8 68848-64-6 78498-45-0 89353-20-8 135573-53-4, Cobalt lithium nickel oxide Co0-1LiNi0-1O2 143314-16-3, 1-Ethyl-3-methylimidazolium tetrafluoroborate 145022-44-2, 1-Ethyl-3-methylimidazolium triflate 145022-45-3, 1H-Imidazolium, 1-ethyl-3-methyl-, methanesulfonate 503313-85-7
RL: DEV (Device component use); USES (Uses)
(batteries using molten salt electrolyte)
IT 7782-42-5, Graphite, uses
RL: MOA (Modifier or additive use); USES (Uses)
(batteries using molten salt electrolyte)
IT 7440-02-0, Nickel, uses 7440-50-8, Copper, uses 12597-68-1, Stainless steel, uses
RL: DEV (Device component use); USES (Uses)
(molten Li immobilized with; batteries using molten salt electrolyte)
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L103 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:750513 HCAPLUS Full-text
DOCUMENT NUMBER: 137:265681
TITLE: Polymer electrolytes for lithium -polymer-batteries
INVENTOR(S): Naarmann, Herbert; Kruger, Franz Josef
PATENT ASSIGNEE(S): Dilo Trading A.-G., Switz.
SOURCE: Ger. Offen., 4 pp.

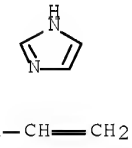
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10112613	A1	20021002	DE 2001-10112613	200103 14
DE 10112613	B4	20070412		

PRIORITY APPLN. INFO.: DE 2001-10112613 200103 14

AB Such polymer systems are usually referred to as polymer gels and they consist of polymers and conducting salts, appropriate aprotic solvents, and optionally also additives which serve as structure-improvers or as effect materials. Homo and/or copolymers which have no p-active groups, but which may be cross-linked, can serve in polymer electrolytes. Also suitable are polymers with a mol. weight from 10 000 to 3 000 000 and polymer types, polyolefins, polystyrene, polydiene, polyethers and/or polyheterocycles, homo and/or copolymers and mixts. of these. Conducting salts include Li salts such as LiBF4, LiPF6, LiClO4, Li-oxalato borate, Li- trifluoromethanesulfones. The solvents are aprotic systems, preferably liqs. with high b.ps. like Et carbonate, Pr carbonate and others. Additives are organic or inorg. structure improvers, cross-linked polymers or SiO2, zeolites or titanates, ferrites and others.

IT 29383-23-1, Vinylimidazole
RL: TEM (Technical or engineered material use); USES (Uses)
(polymer electrolytes for lithium-polymer-batteries)
RN 29383-23-1 HCAPLUS
CN 1H-Imidazole, ethenyl- (CA INDEX NAME)



D1—CH═CH2

IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST polymer electrolyte lithium battery aprotic solvent conducting salt additive
IT Fluoro rubber
RL: TEM (Technical or engineered material use); USES (Uses)
(PVDF-HFP-II 012; polymer electrolytes for lithium-polymer-batteries)
IT Styrene-butadiene rubber, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(block polymers, dioxolanone derivative; polymer electrolytes for lithium-polymer-batteries)
IT Electric conductivity

(characteristic of polymer electrolyte for lithium -polymer-batteries)
IT Primary batteries
(lithium; polymer electrolytes for lithium -polymer-batteries)
IT Polymer electrolytes
(polymer electrolytes for lithium-polymer-batteries)
IT 117197-37-2
RL: TEM (Technical or engineered material use); USES (Uses)
(Luvicross; polymer electrolytes for lithium-polymer-batteries)
IT 7791-03-9, Lithium perchlorate (LiClO4) 14283-07-9
21324-40-3, Lithium hexafluorophosphate (LiPF6)
90076-65-6 244761-29-3
RL: TEM (Technical or engineered material use); USES (Uses)
(conducting salt in polymer electrolytes)
IT 79-10-7D, Acrylic acid, Me derivative, esters with C4 to C12 alc.
88-12-0, uses 98-83-9, α-Methylstyrene, uses 100-42-5, Styrene, uses 2235-00-9, Vinylcaprolactam 29383-23-1, Vinylimidazole
RL: TEM (Technical or engineered material use); USES (Uses)
(polymer electrolytes for lithium-polymer-batteries)
IT 106107-54-4
RL: TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene rubber, block polymers, dioxolanone derivative; polymer electrolytes for lithium-polymer-batteries)
REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L103 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:531955 HCAPLUS Full-text
DOCUMENT NUMBER: 135:124958
TITLE: Polymerizing molten salt monomer, electrolyte composition, and electrochemical cell
INVENTOR(S): Ono, Michio; Sen, Masakazu
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001199961	A	20010724	JP 2000-13048	200001 21
US 20010026890	A1	20011004	US 2001-765368	200101 22
US 6750352	B2	20040615		

PRIORITY APPLN. INFO.: JP 2000-13048 A 200001 21

OTHER SOURCE(S): MARPAT 135:124958
AB The title monomer is represented as Q[Y1(CH2CH2O)nY2]mX [Q = N-containing aromatic heterocyclic group for forming a cation; Y1 = divalent bond; Y2 = (substituted) alkyl; n = 2-20 integer; m = ≥2 integer; X = anion; ≥1 of Y2 contains a polymerizing group; Q or Y2 may be linked to give a dimer or a tetramer]. The title electrolyte composition contains a polymer obtained by polymerizing the monomer. An electrochem. cell containing the electrolyte composition is also claimed. Preferably, the cell contains a charge-transfer layer containing the electrolyte composition and a photosensitive layer containing a dye-sensitized semiconductor. The electrolyte composition has high charge-transfer property, photoelec. conversion efficiency, durability, and ion conductivity and is especially suitable for a secondary nonaq. battery and a solar cell.
IT 288-32-4, Imidazole, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of; in preparation of polymerizing molten salt monomer for polymer electrolyte composition)
RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

IC ICM C07D213-30
ICS C07D233-60; C07D233-64; C08F299-00; C08K003-16; C08L055-00; H01B001-06; H01B001-12; H01L031-04; H01M010-40; H01M014-00
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 38, 76
ST polymg pyridinium molten salt monomer electrolyte compn electrochem cell; imidazolium polymg molten salt monomer electrolyte compn photoelectrochem cell; nonaq battery pyridinium polymer electrolyte compn; solar cell pyridinium polymer electrolyte compn
IT Secondary batteries
(lithium; polymerizing molten salt monomer for polymer electrolyte composition in electrochem. cell)
IT Battery electrolytes
Photoelectrochemical cells
Polymer electrolytes
Solar cells
(polymerizing molten salt monomer for polymer electrolyte composition in electrochem. cell)
IT 98-59-9, p-Toluenesulfonyl chloride 112-60-7, Tetraethylene glycol 288-32-4, Imidazole, reactions 814-68-6, 2-Propenoyl chloride 2615-15-8, Hexaethylene glycol 3304-70-9 4296-15-5, 2-Methoxy ethyl iodide 14104-20-2, Silver tetrafluoroborate 52808-36-3 52995-76-3 90076-65-6, Lithium bis(trifluoromethylsulfonyl)amide 113694-55-6 143127-81-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of; in preparation of polymerizing molten salt monomer for polymer electrolyte composition)

L103 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:493801 HCAPLUS Full-text
DOCUMENT NUMBER: 117:93801

ORIGINAL REFERENCE NO.: 117:16303a,16306a
TITLE: Secondary batteries with polymer electrodes
INVENTOR(S): Yoshinaga, Noryuki; Fujimoto, Masahisa; Furukawa, Sanehiro
PATENT ASSIGNEE(S): Sanyo Denki K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04104477	A	19920406	JP 1990-222005	199008 22
JP 3108082	B2	20001113		
PRIORITY APPLN. INFO.:			JP 1990-222005	199008 22

AB In batteries use conducting polymer anodes and/or cathodes and N-containing compds. as electrolyte solvents. The compds. are selected from pyrrolidone, pyrrolidine, pyrroline, pyrazole, pyrazolidine, imidazole, triazole, tetrazole, and their derivs. There batteries have high capacity d.

IT 288-32-4, Imidazole, uses
RL: USES (Uses)
(electrolyte solvent, for batteries with polymer electrodes)
RN 288-32-4 HCAPLUS
CN 1H-Imidazole (CA INDEX NAME)

IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST polymer battery electrolyte solvent; nitrogen compd solvent battery electrolyte
IT Battery electrolytes
(lithium salts, nitrogen-containing compds. as solvents for)
IT Batteries, secondary
(polymer, nitrogen-containing compds. as solvents for)
IT 25233-30-1, Polyaniline 25233-34-5, Polythiophene 30604-81-0, Polypyrrole
RL: USES (Uses)
(electrodes, batteries with, nitrogen-containing compds. as electrolyte solvents for)
IT 123-75-1, Pyrrolidine, uses 288-13-1, Pyrazole 288-32-4, Imidazole, uses 288-94-8, 1H-Tetrazole 504-70-1, Pyrazolidine 616-45-5, Pyrrolidone 638-31-3, 2-Pyrroline 872-50-4, N-Methyl-2-pyrrolidone, uses 28350-87-0, Pyrroline 37306-44-8,

Triazole
RL: USES (Uses)
(electrolyte solvent, for batteries with polymer electrodes)

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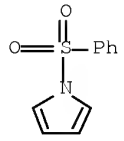
L107 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:745637 HCAPLUS Full-text
DOCUMENT NUMBER: 145:296106
TITLE: Nonaqueous electrolyte solution and secondary battery containing the solution
INVENTOR(S): Kim, Hak Su; Kim, Jong Seop; Park, Myeong Guk; Yang, Ho Seok
PATENT ASSIGNEE(S): Cheil Industries Inc., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2004061572	A	20040707	KR 2002-87845	200212 31

PRIORITY APPLN. INFO.: KR 2002-87845 200212 31

AB A nonaq. electrolyte solution and a secondary battery containing the electrolyte solution are provided to reduce the generation of gas at a high temperature (85°) remarkably, thereby preventing the swelling due to the generation of gas of a battery and improving the capacity storage at a high temperature The electrolyte solution has a Li salt dissolved in a carbonate-based organic solvent mixture; and 0.1-10 weight parts of a 1-phenylsulfonyl pyrrole derivative or 1-phenylsulfonyl thiophene derivative
IT 16851-82-4D, 1-Phenylsulfonyl pyrrole, derivs.
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. containing phenylsulfonyl pyrrole derivs. or phenylsulfonyl thiophene derivs. for secondary batteries)
RN 16851-82-4 HCAPLUS
CN 1H-Pyrrole, 1-(phenylsulfonyl)- (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary battery electrolyte phenyl sulfonyl pyrrole

thiophene deriv
IT Battery electrolytes
(electrolyte solns. containing phenylsulfonyl pyrrole derivs. or phenylsulfonyl thiophene derivs. for secondary batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 21324-40-3, Lithium hexafluorophosphate 56525-42-9, Methyl propyl carbonate, uses
RL: DEV (Device component use); USES (Uses)
(electrolyte solns. containing phenylsulfonyl pyrrole derivs. or phenylsulfonyl thiophene derivs. for secondary batteries)
IT 16851-82-4D, 1-Phenylsulfonyl pyrrole, derivs. 22407-40-5D, derivs.
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. containing phenylsulfonyl pyrrole derivs. or phenylsulfonyl thiophene derivs. for secondary batteries)

L107 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:753254 HCAPLUS Full-text
DOCUMENT NUMBER: 141:228183
TITLE: A nonaqueous electrolyte for lithium secondary battery
INVENTOR(S): Kim, Jin-Hee; Kim, Jin-Sung; Hwang, Sang-Moon; Paik, Meen-Seon; Kim, Hak-Soo
PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea; Cheil Industries Inc.
SOURCE: Eur. Pat. Appl., 33 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1458048	A1	20040915	EP 2003-90262	200308 21
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
KR 2004080775	A	20040920	KR 2003-15749	200303 13
JP 2005108439	A	20050421	JP 2003-183239	200306 26
CN 1531134	A	20040922	CN 2003-155332	200308 27
US 20040185347	A1	20040923	US 2003-658272	200309 10
PRIORITY APPLN. INFO.:			KR 2003-15749 A	200303 13

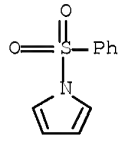
OTHER SOURCE(S): MARPAT 141:228183

AB An electrolyte for a lithium secondary battery includes lithium salts, a nonaq. organic solvent, and additive compds. The additive compds. added to the electrolyte of the present invention decompose earlier than the organic solvent to form a conductive polymer layer on the surface of a pos. electrode, and prevent decomposition of the organic solvent. Accordingly, the electrolyte inhibits gas generation caused by decomposition of the organic solvent at initial charging, and thus reduces an increase of internal pressure and swelling during high temperature storage, and also improves safety of the battery during overcharge.

IT 16851-82-4, 1-(Phenylsulfonyl)pyrrole
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

RN 16851-82-4 HCAPLUS

CN 1H-Pyrrole, 1-(phenylsulfonyl)- (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST nonaq electrolyte lithium secondary battery; safety nonaq electrolyte lithium secondary battery

IT Secondary batteries
(lithium; nonaq. electrolyte for lithium secondary battery)

IT Battery electrolytes
Conducting polymers
Safety
Swelling, physical
(nonaq. electrolyte for lithium secondary battery)

IT Aromatic hydrocarbons, uses
Esters, uses
Ethers, uses
Ketones, uses
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

IT Lithium alloy, base
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

IT 67-71-0, Methylsulfone 71-43-2, Benzene, uses 77-77-0, Vinylsulfone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses 126-33-0, Tetramethylene sulfone 127-63-9, Phenylsulfone 462-06-6, Fluorobenzene 463-79-6D, Carbonic acid, chain ester 463-79-6D, Carbonic acid, cyclic ester 463-79-6D, Carbonic acid, ester 616-38-6, Dimethyl carbonate 620-32-6, Benzylsulfone 623-53-0, Methyl ethyl carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses 1889-59-4, Ethylvinylsulfone 3680-02-2, Methylvinylsulfone 4437-85-8, Butylene carbonate 5535-43-3, m-ChloroPhenyl vinyl sulfone 5535-48-8, Phenylvinylsulfone 7439-93-2, Lithium, uses 7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide

14024-11-4, Aluminum lithium chloride AlLiCl4 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 27359-10-0, Trifluorotoluene 28122-14-7, p-FluoroPhenyl vinyl sulfone 28452-93-9, Butadiene sulfone 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate, uses 37220-89-6, Aluminum lithium oxide 39300-70-4, Lithium nickel oxide 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 131651-65-5, Lithium nonafluorobutanesulfonate 162684-16-4, Lithium manganese nickel oxide
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

IT 80-05-7, Bisphenol A, uses 95-15-8, Thianaphthene 117-80-6, 2,3-Dichloro-1,4-naphthoquinone 271-89-6, 2,3-Benzofuran 524-42-5, 1,2-Naphthoquinone 625-86-5, 2,5-Dimethylfuran 693-98-1, 2-Methylimidazole 1192-62-7, 2-Acetylfuran 1193-79-9, 2-Acetyl-5-methylfuran 4265-27-4, 2-Butylbenzofuran 7474-83-1, 3-Bromo-1,2-naphthoquinone 13243-65-7, 2,3-Dibromo-1,4-naphthoquinone 16851-82-4, 1-(Phenylsulfonyl)pyrrole
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)

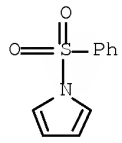
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L107 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:55451 HCAPLUS Full-text
DOCUMENT NUMBER: 130:202087
TITLE: Synthesis and electrochemistry of acid pyrrole derivatives
AUTHOR(S): Millan B, E. J.; Bartlett, P. N.; Grossel, M. C.
CORPORATE SOURCE: Universidad de Los Andes, Facultad de Ciencias, Departamento de Quimica, Grupo de Electroquimica, Merida, 5101, Venez.
SOURCE: Memorias - Encuentro Nacional de Electroquimica, 10th, Caracas, Apr. 23-25, 1997 (1998), Meeting Date 1997, 167-178. Editor(s): Suarez S., Ivan J.; Scharifker, Benjamin; Mostany, Jorge. Universidad Simon Bolivar, Departamento de Quimica: Caracas, Venez.
CODEN: 67FTA3
DOCUMENT TYPE: Conference
LANGUAGE: Spanish

AB The synthesis, growth and properties of β-carboxylic acids of pyrrole in acetonitrile solns. was studied. The synthesis of these derivs. was carried out by Friedel-Crafts reaction followed by reduction of ket-acids. These monomers were electropolymd. by cyclic voltammetry and by pulsed applied potential in LiClO4 solns. as supporting electrolyte. The effect of the length of alkyl chain in pyrrole derivs. on redox potential of obtained polymer films was studied, and oxidation potential dependence on pH in usual solvents was evaluated. It was shown that the oxidation potential displaces to the pos. value with increase of the alkyl chain length.

IT 16851-82-4, N-Phenylsulfonylpyrrole
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(use in synthesis of acid pyrrole derivs.)

RN 16851-82-4 HCAPLUS
CN 1H-Pyrrole, 1-(phenylsulfonyl)- (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 22, 27
IT 7446-70-0, Aluminum trichloride, properties 7647-01-0,
Hydrochloric acid, properties 16851-82-4,
N-Phenylsulfonylpyrrole 16940-66-2
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(use in synthesis of acid pyrrole derivs.)
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

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